

A FEW REMARKABLE FACTS ABOUT ELECTRICITY AND
ELECTRIC TELEGRAPHS.—No. IV.

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"Swan Cruise."

In 1839 Mr. Davy, of London, invented an electro-magnetic printing telegraph, in which he also employed clockwork, producing a step by step motion very similar to the seconds' hand of a clock; on a cylinder, in connection with a prepared fabric, such as calico, which had been previously saturated with a chemical solution (hydriodate of potash and muriate of lime), so that when an electric current was made to pass through a platina ring, which rested on the damp fabric, and thence by way of the metal cylinder to complete the circuit, chemical decomposition immediately took place, and a discolouration of the prepared fabric, at that part upon which the platina rested, was the result; by an arrangement of the clockwork, the cylinder was made to expose a fresh surface of the fabric to be acted upon—the alphabet being represented by the unequal distances of a series of dots, or lines, very similar to that of Professor Steinheil, in 1837.

In 1840 Mr. Babbage invented his electro-magnetic telegraph, which he intended to print with type, instead of using the symbolic characters. In his machine a drum was made to revolve upon a shaft, which had a screw cut upon its entire length, so that the drum, by the action of clockwork, was slowly carried up it, and in its course receiving impressions of the type upon a sheet of paper, which was secured to it by a cylinder, which also had objections in common with this class of machinery, from the following facts:—All printing telegraphs, which use type arranged upon the periphery of a wheel, must have, of necessity, these several movements—viz., the irregular revolution of the type wheel, stopping and starting at every division of letter; the movement of the machinery called the "printer;" the irregular movement of the paper, at intervals, to accommodate itself to the letter to be printed; the movement of the ink-roller, or paratons, or what is not an improvement in cleanliness, the use of paper sheets, which are used by the manifold copying causes to the quick transmission of intelligence parts are so many impeding causes to the quick transmission of intelligence and therefore must be, to all intents and purposes, a complicated system of machinery.—Since the before-named telegraph, there has been another electric magnetic printing telegraph extensively shown about, which is also intended to print by means of type, known as Jacob Brett's Printing Telegraph in England.

This description, where

Professor Whistone also invented an instrument of this kind; but he made use of such paper as was employed for the manifold writer; but instead of weights to keep in motion the clockwork, he used a mainspring in the barrel. And since that, we have had the electro-magnetic printing telegraph invented by Messrs. Heighton, in the construction of which there are as many electro-magnets as letters of the alphabet, placed upon a base board, in front of which is a magnet revolving a cylinder, with the paper secured to it; each arm of which is kept revolving a cylinder, with the paper secured to it; each arm of which has a magnet has a hammer attached to it, on which is secured the type of each letter which, when set in motion, gives a blow to the paper upon which is used leaves the impression in ink upon a sheet of prepared paper, such as is used for the manifold letter writers, and which is underneath, and next to the padded cylinder. Mr. Alex. Bain and Mr. Bakewell have recently brought out two new kinds of printing telegraphs—in the former one the symbolic characters have been printed upon paper or thin cardboard, then set upon rests, so that

linder of the transmitting machine, upon which a cam-spring is attached, allows the spring to come in contact with the paper, during its passage over the cylinder, and thus to receive the impression of the characters of the paper, during its passage over the cylinder itself. The receiving machine, which is placed at an occasional contact with the metal cylinder itself. The receiving machine, which has been placed at the distant station, has upon its cylinder a strip of paper, which has been previously saturated with a solution of water, sulphuric acid, and prussiate of potash. Both machines are to be kept constantly in motion. When a telegraphic dispatch is to be forwarded to any place, the same has first to be punched upon paper, in characters somewhat similar to those used in Morse's telegraph. This paper, when finished, is placed on the cylinder of the transmitting machine, and the cylinder, when revolving with the paper; the electric circuit is constantly being made and broken during the time the spring is resting on the metal cylinder through the cam-spring, and the characters in the paper, which, by means of another spring, completes the circuit through the damp fabric, which is also revolving on metal cylinder at the distant or receiving station, and chemical decomposition then taking place.

leaves the fabric discoloured at that one particular point, and the electric circuit is made and broken at the transmitting station, so many colourations are set upon the fabric at the distant, or receiving, station must be borne in mind, that as many cylinders as there are machines in circuit must all be kept revolving at precisely the same speed. One difficulty which occurred with Mr. Davy's chemical telegraph (discovered by Mr. L. J. D. *the above*) by the application of the acid solvent decomposition added to the pole and fabric in connection, with such delicacy, that the whole of the machine was stopped after two or three impressions. Mr. Baggallay's great attention to this difficulty, and by great perseverance was enabled to overcome it. He has a patent for printing in colours by electricity, dated the 11th of January 1841.

The difference between Mr. Baggallay's machine and Bain's is, that instead of having to punch the words upon paper, he uses a varnish, or other non-conducting material, with which he writes the telegraphic dispatches on the metal itself—a spring, for completing the circuit, being placed upon a cylinder of the same length, so that when in motion

having a thread, or screw, cut in its edge which spring is carried from end to end of the cylinder, and coming alternately in contact with the varnish and metal, produces a fac-simile on a chemically prepared fabric in the distant receiving machine; by means of another screw, constantly moving along a screw from end to end of the cylinder.

which is also kept moving along, the machinery being, in the first instance, started off by means of electro-magnets—the distortion of the character of the letters being, at times very great, from the unequal motion of the machinery.

Showing Telegraph"—the first of which was brought out by a Londoner, Charles Wheatstone, in 1840, and in which he used clockwork, acted upon by electro-magnetism, producing a step by step motion, similar to the seconds' hand of a clock; and another machine was so constructed that a disc, or dial—around the circumference of which the letters of the alphabet were arranged—moved round upon it, because of a current of electricity, produced in a magneto-electric machine.

by which induced magnetism in a piece of iron, and which, by a sudden release, allowed the escape-wheel to slip a tooth at each move, and broke the circuit current by means of a weight in connection with the clockwork. The desired letter exposed itself—the disc, or dial, of which was nearly a facsimile of that employed by Mr. Ronalds in 1816. In the visible of this telegraph, sometimes the letter B would be given at the distant station, when the letter A was intended to be transmitted, or other letters, just as might happen.

The magneto-electric machine with this was worked, being a modification invented by Saxton, in 1832, which was the result of a discovery made by the same gentleman, between the poles of a magnet, and the

Faraday, in 1831, who, by rotating a thin current of electricity, which drove horse-shoe magnet, produced a constant current of electricity, which drove the needle of the galvanometer. For the information of those who may know, the magneto-electric machine is constructed as follows:—Upon a frame is secured a compound magnet, which consists of several single magnets put together so as to gain increased power. Upon an upright support a large pulley, from which descends a cord, and which is connected to a pulley, fixed on a steel shaft, on one end of which is also secured an arm, carrying a pulley, from which a considerable quantity of copper wire is drawn.

of soft iron upon which is coiled a wire, giving a rotary motion to the armature, whilst near the poles of the magnet an electric current is produced, with which most of the ordinary electric experiments can be performed. The magneto-electric machine is, however, adapted for the working of electric telegraphs. Subsequently, Mr. F. V. Coville made a great improvement upon Mr. Ronald's uniformity of time, and his apparatus exceeds the ordinary dial of a clock with an annular scale of 360 degrees.

Mr. William Harrison, of the
sitting plate, to be moved by hand, or a tangent screw—so that, if
very as to time, the centimetral hand is intended, by the movement of
nular plate, to indicate the same time at the two stations.
In the form of telegraph, invented by Mr. Nett, and called the

[illegible]

each step made by the wheel, so that if any letter was taken out of the alphabet, it would be taken out of the code. These kind of machines take 26 distinct motions to produce such a letter twice. These kind of machines, moreover, take such an amount of battery power to work them, that they can never be tolerated on a long line of railway. The requisites for a perfect cipher machine are, economy of construction, simplicity of operation, and

We now pass on to another form of electric telegraph (admission of messages, by almost any ordinary person).

most scientific mind as being the most perfect and the most useful,—that known as Brett and Little's Electro-Telegraphic Converter, by myself in 1846, and for nearly the whole of Europe. The great objects were obtained for simplicity and economy in construction, great in this telegraph being simplicity and economy in construction, great in the transmission of intelligence, by being enabled to work two with one conducting wire, non-liability of derangement, care of wire and loss of time avoided. It is well known, that the greatest power is at its poles; then, in the needle telegraph, the whole magnetism of the poles was at a great distance apart; at the same time, the arrangement

Inches	Pole	Centre
0	165	0
1	90	
2	48	
3	23	
4 and 5	9	
6	9	
13		

Observed Intensity.

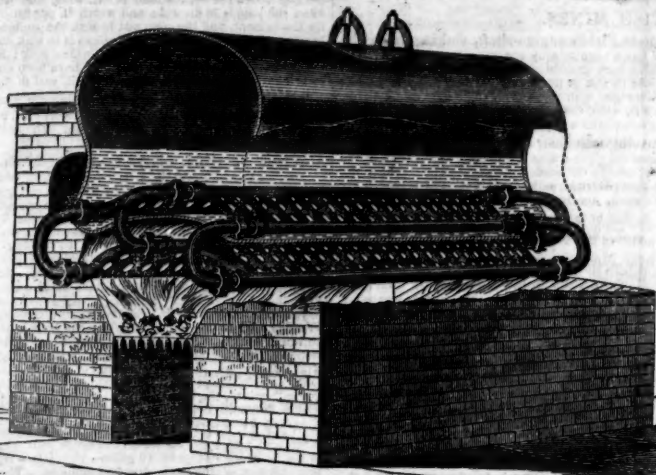
[To be continued in next week's Mining Journal.]

ON PYROGEN.—No. XV.

When two insulated wires are wound together round a block

The curious experiments with two pieces of wire, fixed in the

WRIGHT'S PATENT STEAM GENERATOR.



In the *Mining Journal* of the 21st April last, we inserted the above diagram, with remarks; and the apparatus which it represents having now been in use for some months, and fully borne out the advantages claimed by the inventor, we again call attention to its merits, with a full description of the principle, which consists in applying to the boilers of engines, or other vessels, for evaporating or heating fluids, a cellular apparatus, such as will be easily understood by the engraving. They are constructed of malleable cast-iron, and are hollow throughout; one such set of tubes being placed underneath the boiler, over the fire, and two other sets within the boiler; they are connected together by bent tubes, as shown, so that all the tubes have a free communication with each other, but the water contained in them is insulated, and is, therefore, distinct from that in the boiler, by which means it can be raised to a temperature of 400° or 500° Fahr. without being converted into steam. The general size of the boiler, which is of the wagon form, without a flue; is 6 ft. 9 in. long, 3 ft. 6 in. wide, and 2 ft. 6 in. high; the area of the bottom is about 21 superficial feet. It is set with brick flues, so as to circulate the heat round the concave sides and the ends, being in this respect like an ordinary boiler. The flue surface is about 23 feet area. The area of the cellular plates exposed to the direct action of the fire is about 25 ft., and that of the plates within the boiler about 23 ft. The fire-bar surface is equal to 4 square feet. The quantity of water in the boiler is about 1500 lbs., and that contained in the cellular vessels about 7 gallons. The quantity of water evaporated by this boiler is about 12 cubic feet per hour, making it capable of raising steam sufficient for a 12-horse power engine, although its dimensions are only equal to that of an ordinary 4-horse power boiler.

By this arrangement the flame can only impinge on the boiler through the perforations in the cellular vessels, and all remaining caloric passes over the bridge, and among the remaining portions of the tubes, causing the insulated water therein to take up a large portion of the heat, which heated water circulates through the tubes within the boiler, when the excess of caloric is instantly given off to the water contained in the boiler, and the insulated water having thus parted with its heat, descends, being replaced by the ascending current of heated water, and which in turn gives off its excess and again descends. Thus a constant circulation of the insulated water is kept up through the cells and tubes, which water is the receiver and transmitter of heat, instead of the exterior or the air acting directly on the boiler. The effects produced by this arrangement are extraordinary; the usual average of water evaporated by 1 lb. of fuel in steam-boilers is rarely 8 lbs., and it is corroborated by the most carefully conducted experiments and indisputable testimony, that by this patent process 12 lbs. of water are easily converted into steam by 1 lb. of coal. Here, then, is a direct increase of evaporative power of 50 per cent., and as by the rapid absorption of heat by the tubes, but a moderate degree is taken up by the iron surface of the boiler, its destruction is proportionally slow, and the saving in repairs, and the expense of replacing them immense; while those stoppages and delays, so detrimental, particularly in large establishments, are avoided. It will at a glance be seen that the system is equally applicable to every kind of boiling or evaporation, as to steam-boilers, and will be equally valuable in breweries, distilleries, dye-houses, and all other establishments in which large quantities of fluid require to be boiled. In its application to marine engines, taking all the circumstances into consideration, the advantages will be very great; and, as an instance, we will take a vessel of the Royal West India Mail Company.

These vessels average nominally 400-horse power each, consume about 27 tons of coal in 24 hours, and the time steam is up during the voyages out and home may be taken at 45 days. Taking the saving of fuel at 30 to 40 per cent., the reduced quantity may be considered as about 450 to 500 tons, which, at a mean price of 30s. per ton, will make a reduction in the cost of fuel per voyage of about 700l. Further, these vessels take on board at starting 600 tons of coals, filling up at all the depôts on the route. By this saving they could proceed with 350 to 380 tons of coals, leaving an increased stowage for nearly 250 tons of goods, which, taking the freight at 5l. per ton, will give an additional return of about 1200l., or the total amount to be realised each voyage equal to an increased receipt over the present system of nearly 2000l. Should it not be possible for an increased cargo to be procured to this extent, the increased speed obtained by a lighter load will save one day in every nine or ten of the voyage—a result scarcely less valuable than the profit which would arise from the increased freight on a full cargo.

The experiments have been conducted, with the greatest care, before several eminent engineers, and other scientific men, and the results have averaged an evaporative power of upwards of 12 lbs. of water with 1 lb. of coal, as above-mentioned.

ROTARY ENGINES.—Messrs. W. and Thomas Schnebly, Hagerstown, Maryland, have patented some improvements in rotary steam-engines, which they describe as consisting of "two radial pistons on a rotary wheel within a permanent steam chamber, extending entirely around the piston wheel, being provided with one steam stop and a steam port on one side, and an exhaust port on the other side. The two pistons divide the circle into two equal parts, and are alternately acted upon by the steam, which during the action of the engine is continually issuing from the steam port. Claim.—What we claim as our invention, and desire to secure by letters patent, is—1. The enlarging the sides of the steam chamber from the point where the pistons begin to be drawn in, to the point where they entirely protrude, to avoid friction in that part of the circuit of the piston in which they are not acted upon by the steam, as set forth, in combination with a steam chamber which entirely surrounds the piston wheel, whereby the steam from the steam port acts alternately on the two pistons, and a portion of the circuit passes by the piston that has not yet been entirely protruded, to act in the one that is protruded, and which is within that half of the chamber which is not enlarged.—2. The method of overcoming or balancing the pressure of steam on the outer ends of the piston, while being forced in and out by means of steam ways leading from the steam chamber on each side of the pistons, to the inner ends of the pistons, that the steam from the steam chamber may have access thereto, in combination with a valve placed between the two, to prevent the steam from passing around the steam chamber to the exhaust chamber, as set forth.—3. We claim connecting the moveable pistons with the shaft or hub of the steam wheel, by means of toggle joint levers, in combination with the connecting rods and cranks, whereby the pistons when forced out are held by the toggle joints, and are thereby prevented from making friction against the periphery of the steam chamber, by centrifugal force, as set forth.

THE WONDERFUL CURES PERFORMED BY HOLLOWAY'S PILLS ASTONISH EVERYBODY.—They remove complaints which the faculty pronounce incurable; debilitated constitutions are by their use completely invigorated; the nervous, the delicate, and the weak are made strong, and there is no other medicine known that is so certain and effectual in curing indigestion, and all bilious, liver, and stomach complaints, as Holloway's Pills. They are also an excellent remedy for dropsical affections, and every disease incident to females, and stand unrivalled as an established family medicine, as they purify the blood, cleanse the system, strengthen the body, and reinvigorate it in the soundest health, and often after every other remedy has failed.—Sold by all druggists and at Professor Holloway's establishment, 244, Strand, London.

MANUFACTURE OF METAL PIPES OR TUBES.—Mr. Job Cutler, Birmingham, has recently patented some improvements, the first of which has relation to the application of machinery for drawing metal pipes, when formed, from off the mandril upon which they have been rolled, and with much less risk of causing them to crack or break than the means now employed for that purpose. This improvement the patentee limits to such pipes are made of alloys of metal. The metal is first cast in the form of a short pipe, and, when cleaned, is heated and put upon a mandril, and passed successively through rollers, the grooves in which diminish in size, so that the pipe is reduced in thickness and correspondingly increased in length on its passage through each successive pair of rollers. The metal out of which the pipe is formed is hot during the whole process, so that it does not require to be taken off from the mandril and annealed until finished. To take the pipe from off the mandril, it is cross-rolled by being introduced between three rollers, so arranged that they all bear longitudinally upon the pipe. This cross-rolling causes it to become loose upon the mandril, and, therefore, to be easily withdrawn therefrom. A plan of loosing the mandril by means of swedges and a tilt-hammer, is also described. The second improvement is in rolling the scabbards or sheaths of swords in a similar way to rolling pipes. The grooves are made the proper shape in the rolls, and a mandril of flat steel is employed instead of the round one used for pipes. The third improvement has relation to the formation of rocket tubes, and consists in making them true and of a uniform thickness. This is effected by the cross-rolling process above described. The fourth improvement is in giving pipes, for steam boiler purposes, with a coating of compound metal, consisting first a coating of tin or zinc, and then another of copper. These coatings are deposited upon the pipes by means of a galvanic arrangement. The fifth improvement is in coating the outside of pipes, for the conveyance of gas and fluids underground, with metal, as last described. The inside of these pipes is covered with enamel, by any of the usual processes employed for enamelling pans and other articles made of iron; or both the outside and inside of such pipes are enamelled. Claims.—1. The means employed for taking the mandril, by cross-rolling, from pipes formed of alloys of metals, as described.—2. The making of sword scabbards, as described.—3. The making of pipes of uniform thickness by cross-rolling.—4. The coating of pipes with different metals.—And, 5. The coating and enamelling of pipes for sewage and underground purposes.—*Mechanics' Magazine.*

NEW AND SUPERIOR PAINT.—Among the many novelties of the age we have to call the attention of our readers to, is a new article for painting the interior of houses, &c., which is quite free from the noxious and disgusting effluvia arising from the amalgamation of our present house-paints with turpentine and oil. We are not at present in possession of the knowledge of what the material consists, but it is stated to be soluble in oil, water, or varnish, to dry quickly, perfectly odorless, and possessing all the advantages of paint at present in use. We have received a prospectus of a company to be formed for carrying out the discovery, by which it is proposed to raise a capital of 5000l. in 500 shares of 10l. each, a call of 15s. per share to be made on complete registration, 10s. in a month, and another 10s. two months after the second call, and no further call to be made, except at a general meeting. The inventor produces testimonials from persons who have had apartments painted with the new composition, which he styles the Paragon Paint, all of whom bear testimony to its rapidity of drying, the absence of smell, and its excellent preservative character. It will bear cleaning equally well as common paint.

ENAMELS FOR IRON.—Mr. Charles Stumer, of New York, has recently secured a patent, which he describes to consist "in providing an enamel for iron and other metals, which will retain its adhesion to the metal, and particularly is it not capable of being crumbled or broken off by blows or by heat, this possessing the quality of comparatively commingling with the surface of the metal. Thus it is far superior to any known enamelling for metals, and may be modified so as to render it in all the shades of colours, in full variety.—1. 16 ounces of gravel sand, 10 ounces of silver glass, (silver gilt or silver gilding), 2 ounces of white clay, 3 of an ounce of saltpetre.—2. 7 ounces of glass, (common white glass), 4 ounces of gravel sand, 8 ounces of zeon reanocks (or oxide of tin), 6 ounces of borax, 1½ ounces of soda, 3 ounces of saltpetre, 1½ ounces of white clay, 1 ounce of magnesia, ¼ of an ounce of white chalk, ¼ of an ounce of oyster shells—this should be pulverised like first composition, and then mixed with the gum water. Claim.—What I claim as new, and desire to secure by letters patent, is the peculiar composition, composed of the parts and compounded as described.—*Franklin Journal.*

CURIOUS IMPOSITION.—On Monday three men were committed for trial at Liverpool, charged with defrauding a tradesman, named Lumb, by selling him, for gambier, at 13l. per ton, a compound of resin and chalk, worth only 1s. 9d. per cwt. Dr. Brett, the celebrated chemist, who was called as a witness, deposed that, taking a hundred weight of it, there were 32½ lbs. of resin to 79½ lbs. of chalk. One cask contained merely sand, covered with oxide of iron. Gambier, which is known as *terra japonica*, was a substance used in tanning, dyeing, and other operations requiring a quantity of astringent matter.

NEW CHEMICAL WORK.—A polytechnic work, on an extensive scale, is at present being erected at the Maldens, on the Carrick shore, some distance south of Ayr, to resolve wood, by the action of fire, into acids, alkalies, resin, and other valuable substances. The work is being erected by the Marquis of Ailsa, and will be conducted under his management, the material being refuse wood on his plantations. It is expected to be in operation soon.—*Ayr Advertiser.*

THE TIMBER-PRESERVING COMPANY.—The half-yearly meeting was held on the 31st August, at their offices, Whitehall-wharf, Westminster, when, after reading the report of the company's operations for the past six months, and laying before the shareholders a statement of the accounts, as prepared by Messrs. Quilter and Ball, a dividend at the rate of 6 per cent. per annum was declared, the chairman, Mr. George Burge, stating that their future prospects were most encouraging, and, from the daily increasing extent of their works, he had no doubt he should be in a position, at the close of the next half-year, to meet them with a larger amount of dividend.

GREAT NORTHERN RAILWAY.—Another important section of this line has just been opened, which will very much increase the facilities of transit into Yorkshire and Lancashire from the south, and to the eastern and Midland counties and London from the north. Commencing at Doncaster, the new line (which is a portion of the Great Northern main trunk or towns line) proceeds to Rossington (4½ miles), Bawtry (8½ miles), Ranskill (12 miles), and Retford (17½ miles). At Retford it joins the Manchester, Sheffield, and Lincolnshire Railway, which connects the route to Gainsborough, where the Great Northern loop terminates. By the opening of the Methley branch of the Lancashire and Yorkshire Railway, the Great Northern line will now afford a direct communication from London to Leeds and York.

CORK AND BANDOON.—We are authorised to state, and we have much pleasure in doing so, that a contract has been entered into between the directors of this company and Messrs. Fox, Henderson, and Company, eminent railway contractors, on favourable and satisfactory terms, for the completion of the line to Cork within one year from the present period. The works are to be commenced immediately.—*Cork Reporter.*

FRENCH RAILROADS.—The net work of railways in France cover an extent of 5525 kilometres, of which 2883 are, or soon will be, ready for traffic. The total sum to be expended is 53,535,000 fr., of which 59 per cent. has already been expended.

IMMENSE BLOCK OF GRANITE.—Last week a "muckle hole" (a term used by the quarriers of stone) was put down 15 feet deep through solid granite, in one of the quarries in Stibbians, near Penryn, belonging to Mr. Elliot, of the latter place. Only 25 lbs. of powder were deposited, which being blasted was found to have thrown off from its bed and side joints a block containing 20,300 cubic feet, or 1400 tons, of excellent quality and blue colour, thus enabling the workmen to cut blocks of any dimensions required.—*West Briton.*

SHREWSBURY AND BIRMINGHAM RAILWAY COMPANY.

[ADVERTISEMENT.]

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—At a meeting of the shareholders in this company, held at the Swan Hotel, on the 30th ult., some proceedings took place, of which, I think, I have just cause to complain. Reference was made by a shareholder from Bilston to some charges that had been made against one of the directors, and he had been told to suspend his judgment until the committee appointed to investigate these charges should have made their report; that these charges had seriously injured the property of the shareholders, and he wished to know why these charges had not been reported upon. The chairman replied, that the report had been made, and now lay before him—would they wish it to be read to the meeting? The answer from several voices in the middle of the room was "No, no." The shareholder I have referred to left the meeting without requesting the chairman to read the report, which, I think, was an act of injustice to the director referred to. I have complained over and over again about this report having been kept back so long, but was assured it should be made known either before or at the general meeting. Upon this assurance I consented to become one of the retiring directors (although I had no need to have done so), so that if any of the charges against me were proved, the class B shareholders might place their interests in honest hands; but I never supposed my re-election was to take place with these charges hanging over my head, which was done by keeping back the report, and of this I strongly complain. However, the class B shareholders had not lost their confidence, and I was again appointed their servant—for this I tender them my best thanks. The report of my judges—a copy of which I send you herewith—has given me a full acquittal. I never for a moment doubted this result, for not one of the charges was founded in fact, and the verdict has fully justified my expectation.

I am, Sir, your most obedient servant,

G. B. THORNECROFT.

Report of the Committee of Directors of the Shrewsbury and Birmingham Railway Company, appointed by the board to enquire into the allegations of Mr. Charles Geach, of the Patent Shaft and Axletree Company, in reference to a contract made by the Shrewsbury and Birmingham Company, for wheels and axles.

Your committee invited the attendance of Mr. Geach and Mr. Thorneycroft, and in the presence of those gentlemen the correspondence of the former with the chairman and the secretary of the company was read, in the course of which Mr. Geach explained to your committee the grounds upon which he felt justified in making the statements contained in his first letter to the chairman (March 10, 1849), and which contained the charges against Messrs. Thorneycroft and Perkins, that they, as members of the carriage committee, and with a view to their own gain, had induced the other members of that committee to fix upon descriptions of iron for axles and tyres involving an outlay on the part of the company amounting to 6597. 5s. 10d., (should be 6597. 11s. 8d., there being an error in Mr. Geach's calculations) on the contract entered into beyond what wheels and axles, equally efficient, might have been supplied. The charges against the secretary of the company, Mr. Thorneycroft, and the other charges against Mr. Geach, of unfair influence against competitors, were so satisfactorily refuted that your committee consider it unnecessary to burden their report with any matters except those pertaining to the main charge against Messrs. Thorneycroft and Perkins, which has been already stated.

It appears in evidence before your committee, that the carriage committee, in framing the specifications for the sample stock of the company (which were printed and circulated among the various carriage builders in 1848), adopted the patent shaft axle as the most approved axle then known; but having at the same time and submitted to their notice the patent compound axle, with an offer to test the principle against that of the solid axle, the adoption of the latter was qualified as follows:—"The axles to be of the Patent Shaft Company's manufacture, unless otherwise ordered."

It appears that in the specimen stock of the company the patent shaft axles were used, but that at a meeting of the carriage committee, at which six members were present (October 13, 1848), it was resolved to adopt the patent compound axle in the future contracts for the company's stock; and it further appears that such resolution was passed in consequence of the comparative strength of the two descriptions of axles having been tested on the 23d of September preceding.

Your committee regret that Mr. Thorneycroft having drafted a letter containing a challenge on the part of the Board to test the patent compound against the patent shaft axle, such letter should, under misapprehension, have been signed by the secretary. Had it been signed by the secretary, it would, in the opinion of your committee, at once have been rejected as a proposition below the dignity of a public board. Your committee also regret that a letter written subsequently by the secretary to Mr. Geach contained expressions which led to an inference that they had met on this matter previous to the meeting when Messrs. Thorneycroft and Geach attended, whereas no such meeting had taken place, and such letter was written without the cognizance of this committee.

In reference to the difference in expense between the compound axle and that of the Patent Shaft Company, it appears that it chiefly arises from the fact of the former, as supplied to this company, being made straight throughout instead of being drawn in the middle, whereby there is an increased weight of from 30 lbs. to 35 lbs. per axle. As, however, a reduction of 17. per ton is made when straight (both parties charging the same price when drawn down), the increased cost per axle is at most 2s. 4d., or upon the 250 sets contracted for 58l. 6s. 8d., against which there is the extra weight of iron.

The chief item in the difference of cost stated by Mr. Geach has reference to the use of charcoal tyres, instead of tyres such as are manufactured by the Patent Shaft Company. On this point it appears in evidence before your committee, that the use of charcoal iron for tyres was adopted by the carriage committee in the printed specifications for the sample stock, it being considered as strong and more durable, and at the same time, cheaper, than Low Moor tyres, which at that time were, and are now, in very general use by railway companies, and would have cost 27. 17s. per set, or 712l. 10s. on the whole contract above that paid by this company for charcoal iron. It also appears that the cost of tyres made of iron manufactured by the Patent Shaft Company is below that of charcoal iron, at the then prices of each by the sum of 1l. 7s. 8d. per set, or 345l. 10s. 8d. on the contract.

It must not, however, be inferred from this, that the company has not obtained a corresponding advantage by the additional outlay. If cheapness alone were to govern decision in such cases, tyres made of best South Staffordshire iron could have been had for 428l. 2s. 6d. less than the amount which would have been charged by the Patent Shaft Company, and Mr. Geach, in one of his letters, offers to supply wheels and axles at 5l. per set less than that charged by the Patent Shaft Company. It is also stated in evidence before your committee, that the tyres of such wheels would be inferior to those of the Patent Shaft Company, and that the use of such wheels would be a disadvantage to the company, inasmuch as such iron has been condemned by the railway commissioners. It is obvious, therefore, that the questions of public safety and durability have to be taken into account, as well as cost, in order to arrive at a correct decision on the matter; and it appears to your committee, from opinions expressed by practical men, that the carriage committee were justified in selecting a description of iron which, if not the lowest in price, is considerably under the highest.

In reference to charcoal iron tyres having been adopted by the carriage committee with a view to their being supplied by Messrs. G. B. Thorneycroft and Co., it appears in evidence before your committee, that at a meeting of that committee on the 25th of July, 1848, when six members were present, and on the 13th of October, 1848, when six members were present, the adoption of charcoal tyres for the future stock of the company was decided upon, having also been previously adopted for the sample stock. The stipulation for Thorneycroft's charcoal tyres, entered in the minute of the carriage committee for the 9th of January last, and subsequently in the specification, is stated by the secretary to have been so entered by him without the knowledge of Mr. Thorneycroft, and under the impression that Messrs. Thorneycroft and Co. had a patent for the manufacture of charcoal tyres, which has since been ascertained to be incorrect, other manufacturers of the same article having been named to your committee. It is but right to state that Mr. Geach himself, in his letter to the chairman of the 20th March, has fallen into the same mistake, and that so soon as the error was discovered, and before any part of the contract had been executed, it was amended by the substitution of the words "best charcoal iron." Mr. Geach has supplied your committee with the prices of iron furnished by Messrs. Thorneycroft, in answer to applications from makers of wheels, and justifies his charges on the ground of public safety and durability, and that the use of charcoal iron, as an article is put on the back, and only a small portion of charcoal iron on the face. Mr. Thorneycroft, on the contrary, has stated to your committee that the tyre is made one half of a mixture with Indian charcoal pig (the latter costing 7l. 10s. per ton), and the other half entirely of Staffordshire charcoal iron, which in the price list of several manufacturers is quoted at, when rolled, from 5l. to 6l. per ton above the price of South Staffordshire iron. Such being the case, it does not appear that the prices furnished by Messrs. Thorneycroft and Co. are higher than would be charged by other manufacturers, nor that the manufacture of charcoal tyres yields them a greater profit than tyres made from other description of iron.

The remaining item in the sum stated by Mr. Geach to be lost to the company is in the iron for the spokes, amounting to 6s. 6d. per set, or 81l. 5s. on the contract; and here, again, the carriage committee, in adopting best Crown South Staffordshire iron for spokes, instead of common South Staffordshire bar iron, may be supposed fully competent to decide which was the better for the interests of the company, taking into account the questions of public safety and durability and efficiency, which cannot be separated from the cost in forming a just estimate. The price quoted by Messrs. Thorneycroft and Co. gives only the difference which is well known to exist between the two qualities, and the contractor had the names of five respectable manufacturers of bar iron, furnished to him, from either of which he might purchase the iron; this the carriage committee considered necessary, as a guarantee for the use of the description of iron specified.

Your committee have thus noticed the general items which constitute the amount that Mr. Geach states has been paid by the company more than was necessary, in which opinion your committee do not at all concur; and while they regret that Mr. Thorneycroft's name was inadvertently inserted in the specification as the manufacturer of charcoal tyres, as it would appear to justify the charge of improper influence for his own private benefit, they must at the same time express their conviction that neither that gentleman nor his partner have ever used such influence in any way disadvantageous to the interests of the company.—August 17, 1849. STEPHEN PHILLIPS, Chairman.

LIABILITY OF RAILWAY COMPANIES FOR ACCIDENTS.—A person in Stirling entered an action against the Scottish Central Railway Company for compensation for damage done to a horse, in passing a level crossing of the road over the line. The defence was, that the injury arose from no defect in the rails, but from an erroneous and unusual manner of shoeing the horse. The sheriff substitute, however, after carefully going through the evidence, decided that the horse was being conducted along the road in proper time and manner—that his shoes were in proper order, and that no blame could attach to his conductor—that the injury was inflicted by a defect in the construction of the check rails, they being of too narrow a gauge, and extremely calculated to catch and twist the feet of horses in passing—that similar constructions on other lines did not justify the continuance of these, and which rendered the defendants liable. The horse had been sold at a diminished price from his former value, and the company were convicted in penalty equal to the loss.

RED-HOT IRON.—M. Bonigny, says a contemporary, has made the discovery that you may play with molten iron with impunity. But, 30 years or more, a lecturer—Mr. Dalton, we believe—visited this country, and, after immersing his hands in steam and boiling water, said the same might be done unharmed with red-hot iron. He related that, being once in a foundry, he saw young lads running barefoot over iron that had just flowed from the furnace; and, putting off his shoes and stockings, he prepared himself to following their example. "But," he added, "my heart failed me, and I put them on again!"

Mr. Geach makes it 1577. 5s. 10d., but he states the difference of weight at 60 lbs. per axle.

Mr. Geach makes the difference 445l. 10s. 6d., but he has taken the weight and price of tyres for 3 feet 6 inches wheels, instead of 3 feet; he might, however, have stated it at a larger sum, as he admits having since supplied his iron for a contract for tyres at 10l. 10s. per ton, being little more than the price of South Staffordshire iron.

FOREIGN INTELLIGENCE.

California.—Further advice has been received from the United States and California during the week, but containing nothing of a very important character. Wood, iron, and zinc houses were in great demand; and, it is said 300 sail of vessels will arrive at San Francisco before November, in which at least 1000 houses of this description will arrive. Of the numbers constantly arriving, many returned without visiting the gold region, disgusted with the difficulties and shifts they were put to, and poorer than they started. Many kinds of goods were as cheap, or cheaper, than in New York, and houses were only being most exorbitant. Towns are springing up all over the country, and already have sites been laid out for 15, on all of which many buildings were erected. Gold was beginning to come in, and it was estimated in New York (on what data we are not told), that for the year commencing June 1, \$20,000,000 worth would be obtained. Gold dust was selling \$165 per oz., and \$16 in exchange for provisions. Of the gold region itself, we have an account from a gentleman who owns an estate in Chili, and is a scientific and practical miner; he is now in the plains of the Sacramento, with a party of 14 of his own men, principally gold washing in the Juba river; he is well provided with every necessary, boats, horses, tents, cooking apparatus, &c.; and, from his very style, we think his observations may be relied on. He says:—

"The banks of the river abound in deer and elk, hares and rabbits. Of the feline tribe I have noticed only one, killed by one of my men, of the small panther species. Grizzly bears, of a large size, are numerous. The ornithology of this part of the country is poor, and of very little variety, with the exception of the aquatic birds. Ducks, geese, the common and the very numerous, and the land birds noticed by me, were the raven, the common crow, the goshawk, and the white hawk, besides a species of mocking birds with a blue plumage. I have also noticed one species of humming bird of the dwarf kind, with very beautiful red and green plumage. Rattlesnakes abound on the banks of the river, although they are said not to be so venomous here as in the warmer regions. There are also several species of red and black snakes, but they are perfectly harmless. The water abounds with salmon and trout of an excellent quality. The river is very rapid, and the vegetation on the mountains to the Sacramento, is a broad, deep, rapid stream, its banks higher than those of the other river, but presenting the same geological and botanical features; and, it is singular that none of these rivers, in their course towards the ocean, roll any stones, and I believe but little gravel, along with them. No stones are to be found on the banks, the only thing approaching to them being 'toca,' a petrification of sand. The only shells found on the banks are a few bivalves, or fresh water mussel. On ascending the Alpine region, the face of nature changes suddenly, the vegetation being confined principally to the pine and dwarf birch, and a small shrub of the myrtle species, being a hard iron-wood with which the Indians point their arrows. The ground here is of a red marly clay, and contains gold even to the summit of the hills, which are interspersed with large crags and rocks. The river to which you descend to get into what is called the 'placers,' or gold washings, is a rapid dangerous mountain torrent, running between bold banks of crags and rocks, from the sand accumulated amongst which the gold is washed out. As yet, mining has been done in a very imperfect manner by the adventurers who first looked to these regions, and finding gold so abundant on the surface, gave themselves little trouble, and did not care to penetrate into the bowels of the earth. The gold runs in a regular strata, formed, in my opinion, by the alluvial deposit from the neighbouring hills during a lapse of ages, and as a natural consequence arising from the gravity of the metal, the sub-strata is infinitely richer than that upon the surface. I am, at present (June, 1849) working at a place on the Juba where the gold has already been taken from the surface, and I find that the deeper I dig the richer the earth is. As a proof that this gold is all alluvial (or brought down by the river), it is found in greater quantities at a bend where the river forms a bar. I have also observed that where the hills on the sides of the river are bold and precipitous, the auriferous deposit is generally greater than where they run in a gentle slope. As yet, I have seen no veins of gold in these mountains, but a specimen of gold imbedded in a matrix of white quartz was shown to me, said to have been brought from the Snowy Ridge. It was exceedingly rich, the greatest part of the stone (ore) being pure gold, and weighing about 4 lbs. The fact that the veins contain increased in richness, have little doubt, because, after the freshets occasioned by the melting of the snow are reduced, and a part of the course of the stream is left dry, the earth dug out is much richer than that found upon the banks, which is easily accounted for, as the principle bed of the river receives the auriferous deposit from all the hills which it passes from its source, whereas the higher banks can only be enriched by the gold washed down from the nearest mountains. Although there has been much exaggeration in the statements with regard to the gold in California, which I had seen previously in this country, nevertheless, the richer appear almost incredible, and I have much hesitation in stating the quantities of gold which I know persons to have washed out in a very short time. I will confine myself to the fact which has come under my own personal observation, that a man with a common washing-pan, which is merely a round wooden bowl, containing about the fourth part of a bushel of earth, in six or seven hours' labour, obtains from 1 to 2 ozs. of gold—of pure gold, too; and this the men under my direction are actually doing. Let me remain that this is a sum which has never been exceeded by the gold washings of Chibout or Peru, by a regular routine of labour, at the highest price at which the gold is sold. The gold of the Juba is contained in a fine black sand, containing oxide of iron in abundance, which can be extracted easily with the loadstone, after the gold has been washed clean with water." The following description of the difficulties attending gold seeking is well worthy attention. "After the poor working digger gets, by great labour and at considerable expense, to the scene of operations, his hard work only really begins. He must be constantly in the water to carry on the operation of washing gold; and the work is performed in such a manner, as is so fatiguing, that the men are immersed in cold water, the upper part of his body is streaming with profuse perspiration, with a burning sun over head. Then his living, unless he spends the best portion of his earnings, is poor and very expensive, and his lodging is often more than not on the ground. Then, again, he may not be successful—all are not lucky. Gold-finding is like gambling, and the man who does not dig, and the Irish hodman will do well at digging, if they do not overwork themselves; but to all others I would say, 'leave well alone.' It is madness in a man who cannot sleep out under a tree, eat the hardest of fare, and endure great fatigue, to take to a working gold mine." The United States steamer arrived at Panama, on the 14th July, from San Francisco, dated the 21st June, with 83 passengers, \$400,000 in gold manifested, supposed another \$100,000 by private hands.

It may be desirable to give a further caution against the schemes which, owing to the nature of the recent advice, are again making their appearance, in the shape of California gold mining companies. Apart from the inherent absurdity of these projects, and the light thrown upon the objects of the con- ductors by the correspondence with one of them which we inserted in July last, we have now the results of experience, which show that even in cases where parties have arrived with the view of working as a company on the spot for their own advantage, and not for that of shareholders, the attempt has uniformly failed. In some of the last letters from San Francisco it is expressly mentioned, that in every instance of the kind the parties have almost instantly broken up—the strong and industrious leaving the weak or idle, notwithstanding the most solemn pledges which had previously been entered into.—*Times*.

Papers from Launceston and Hobart Town, to the 4th April, have arrived, but their contents present little for extract. The markets were steady, and wheat, according to quality, sold at from 3s. 6d. to 4s. per bushel, while flour remained about 10s. per ton. Shipments of goods were being made to California, but the movement was not attended with the excitement which prevailed at Sydney. One vessel had made the voyage, and was, at the date of these accounts, taking in cargo for a second trip. The new coal mine at Knocklofts was being brought into active operation, and the expectation was that its situation would render a supply available for Hobart Town at moderate prices.

DISCOVERY OF COAL IN EGYPT.—The *Journal des Débats* publishes a letter from Grand Cairo of the date of the 1st of August, which announces the discovery, by a French civil engineer, of a stratum of coal in the vicinity of the Nile, towards Upper Egypt. This is a most valuable discovery, inasmuch as it will relieve the Government from the onerous tribute paid to England for the purchase of this indispensable article. Two engineers, an Englishman and a Frenchman, were employed to investigate the lands in the vicinity of the Nile, for the discovery of coal about three years ago; but these superficial inquiries reported that there was none, and that, moreover, none would be found? The Frenchman first mentioned, more diligent and more skilful than his predecessors, has completely overthrown this bold assertion. The samples have been referred to a commission, and the excavations will be continued on a large scale.

[From the Plymouth Journal.]

WHEAL FRANCO.—There is little or no change here; the deep levels are certainly not looking worse than they were when we last reported.

TAYBROCK CONSOLS (late Wheal Ash).—I expect to be under the large gossan in the pit by the hedge within three weeks; the lode is a very promising one, and has rather more spar mixed with the muddle.

WHEAL ANDERTON.—This mine is on the whole looking well; the lodes recently cut in the shade pits are very fine, and much may be fairly expected from them in the 80 fm. level, the depth at which they will be first seen in this mine.

FLEMMING'S WHEAL YEOARD.—The agents, on the 4th inst., state, in addition to our report of the 23d of March, that they say that the lode in the engine-shaft is much improved in appearance. The two feet of the lode is producing fair work for tin. We find the lode is getting into a more settled state as we go deeper, and seeing this, we beg to urge the sinking of the shaft with all speed. We hope that the adventurers will persevere in giving this lode a fair trial, as we believe they will be remunerated for their great outlay. The present encouraging appearance of the lode, and the superior quality of the tin, which realised at the last sale 44s. per ton, are, we think, sufficient inducements.

BIRCH TOR AND VITIFER MINES.—Vittifer Lode: Dunstan's shaft is in the 20 fm. level, and the lode is as promising in the bottom of the shaft as it was when we first cut the lode 18 fms. above; now we have a piece of ground before us 500 fms. long, and 20 fms. high, and judging from the work done by us, and from the large works made by the ancients, we have a good paying mine already open. The 10 fm. level, east of this shaft, has been driven 18 fms.; in driving this end, we cut the large cross-course by which the lode was discovered for the first 13 fms.; for the last 15 fms. the lode has been regular, and we have had a good branch of tin there, and we have also a good branch of tin in the present end. The 10 fm. level west of this shaft has been driven 12 fms.; in driving this level we had a hard bar of ground for about 15 fms., through which the lode was poor; as soon as the ground changed by the side of the lode, the lode improved, and we have a paying lode in the end.—Birch Tor Lode: The lode in the back of the 10 fm. level, west of Priddy's shaft, is improved; they were let in June for 12s. in 11, for tin; for tin, we now let at 10s.—These lodes are about 2 fms. above the back of the level for 7 fms. in length; the lode east of this shaft is also improved, they are now about 10 feet above the back of the level for 10 fms. in length; there is a little tin in each of the ends in the middle in the deep level—this end does not improve as might fairly be expected from its appearance. I am expecting a good lode since my last report, the end is hard at present; there is no change in the shallow level since my last report, the end is still worth 6s. per fm. I beg to say, that if the ground below us is worth no more than 8s. per fm., which is very low, I can pay you very good profit.

BRITISH MINES.

ALFRED CONSOLS.—The lode in Field's engine-shaft, sinking under the 50 fm. level, is from 6 to 7 ft. wide, and has a regular ore course on the north part, 2 ft. wide; the other part of the lode is looking very promising, being more spar, the hard capel having nearly disappeared; the lode in the 50 fm. level, east and west, is just as reported for some time past—large, and dredged with copper ore. The lode in the 40 fm. level, east of the engine-shaft, is about 5 ft. wide, composed principally of capel and carbonate of iron.

BARRISTOWN.—In the end driving east over the adit level the branches are more numerous, and containing more ore; the slopes in the back and bottom of the adit level are looking much the same for ore as for some time past. The slopes in the back of the 16 fm. level are producing about 6 cwt. of lead per fm. The slopes in the bottom of the adit level, west of Doo's shaft, are producing about 10 cwt. of lead per fm.; in the winze sinking to the west of this the lode is large, producing at present a small quantity of ore. I intend to remove the men from this winze in the ensuing week to Kiln shaft, as the water will be got under to the 18 fm. level.

BEDFORD UNITED.—At Wheal Marquis, in the 100 fm. level, east of Bailey's winze, but little has been done since last report; the lode in this level west remains without alteration. There has been no bedrock down in the 90 fm. level east; it is intended to cut through the lode the latter part of this week. The lode in the 70 fm. level east is 2 ft. wide, producing a little ore—a very kindly lode. We weighed at Morwellham June ores, 118 tons, and sampled July ores, computed, No. 1, 71 tons, and No. 2, 63 tons.

BLISLAND CONSOLS.—We are still driving the cross-cut in the adit south with all force, night and day, and have driven 10 fms. 4 ft. this last month; the ground is now getting harder, and we have cut through several branches this last week, which makes me think we are near a lode. The men continuing to hill have made no further discoveries as yet, but I am in hopes they will cut something shortly, as they have some good shute stones in their pits. We have nine men on the lode, and we are getting on well with them, as also our wheel pit, which I hope will be ready for the machine in a few days.

BYRN-AR-IAN.—The 10 fm. level is now extended 4 fms. east from the engine-shaft; the lode is present from 7 to 8 ft. wide, but we have not seen the south end of it for the last 2 fms.; the part which we are carrying for the level, about 5 ft. in width, will produce more than 1 ton of lead ore per fm., and is improving every foot we drive. The stop back over the adit level still continues to yield about 1 ton of ore per fm.; the stop back of the same level, east of the winze, 15 cwt. of ore per fm.; the stop in the side of the adit level, east from the shaft, produces 10 cwt. of ore per fm.

CARTHEW CONSOLS.—At the upper mine, our success in forking the engine-shaft has not been so great this week as I anticipated it would have been, owing to the damages done it at the time the capstan rope broke, by the means of the lift of pumps in its descent to the bottom knocking out all the timber which stood in its way. We are progressing favourably in clearing the 45 fm. level south, and in driving the 35 fm. level in the same direction we find the lode has much improved since my last report, the 28 fm. level also has not failed in giving its proportionable prospect of a better day; and I state, with much pleasure, the tribute pitches still yield their bountiful supply of lead and copper in augmented quantities, and look likely to continue. At the lower mine, whilst it is in my power to report so favourably of the upper mine, from its various changes and alterations, I can see but little deviation in the adit end here from former reports; the ground is very good, and looks promising, but for what we shall, it is probable, have to wait until we get near the junction of the upper mine lode.

CWM ERFIN.—The slope east of the engine-shaft, in the back of the 20 fm. level, is worth 8s. per fm. The slope from 20 to 30 fms. east of the engine-shaft are worth 12s. per fm. The slopes from 30 to 40 fms. east of the engine-shaft are worth 12s. per fm. The 20 fm. level east of the winze-shaft is poor. The winze, 25 fms. east of the winze-shaft, sinking under the 10 fm. level, is worth, for the length (12 ft.), 15s. per fm. Our machinery is working well, and our dressing proceeding very satisfactorily.

DEVON AND COURTENAY.—The lode in the winze in the bottom of the 40 fm. level is again increased in size, being now full 5 ft. wide, but, as before, composed chiefly of white iron and prill, and mixed with branches and spots of ore—some of which we are saving; the footwall is going down more perpendicular; in the rise in the back of this level the lode is 2 ft. wide—in one part of which is a leading branch, from 4 to 6 ft. wide, yielding good black and yellow ore; it is looking better to-day, and has a deeper level. We intend to cover the cost while sinking the shaft, and laying open ground at a deeper level. We intend commencing with our burning to-morrow, and hope to sample the quantity promised by the mine of Sept., provided we can get water for fueling the ores at West Downs after it is burnt. We shall want a load of timber for Sept. for pulley stands, &c., for the new lift of surface-rods from the engine to the middle shaft, and also about 24 tons of coals for the engine and burning-house. The quantity of candles and powder requisite will be deducted from the men's charges.

EAST BIRCH TORR (TIN).—Since my last report, we have driven a cross-cut about 4 fms., and by so doing have cut the No. 5 lode to the east of the cross-course, and have discovered a good branch of tin. Six men are now driving on the course of the lode, and I calculate on getting ahead 10 fms. by the end of this month. I am persuaded we shall find this lode improve in length. I have also to inform you that the tribute-men are at work, and I find that all the workings in the mine are very much increased in value since my last report.

EAST CROWDALE.—The middle shaft, let to sink below the 17 fm. level, by mine men, limited 5 fms. in the month, at 8s. per fm.; the lode in this shaft is not so good as last reported—we believe the tin runs in floors; we calculate completing the shaft to the 17 fm. level, by the end of October next. Also let the slopes in the bottom of the 17 fm. level, to slope by eight fms., that the month, at 8s. per fm. Our object in doing this is to search the bottom of the level, to ascertain the quality of the lode and to relate tin enough, if possible, to cover the cost while sinking the shaft, and laying open ground at a deeper level. We intend commencing with our burning to-morrow, and hope to sample the quantity promised by the mine of Sept., provided we can get water for fueling the ores at West Downs after it is burnt. We shall want a load of timber for Sept. for pulley stands, &c., for the new lift of surface-rods from the engine to the middle shaft, and also about 24 tons of coals for the engine and burning-house. The quantity of candles and powder requisite will be deducted from the men's charges.

EAST TAMAR CONSOLS.—The shaftmen have commenced cutting ground for tram-road, plat, &c., and will shortly resume sinking the shaft. The 80 fm. level, being at least 25 fms. 1 ft. 6 in. wide, say for driving, with a small branch of lead, and likely to improve; the same level has been extended north from the shaft 3 fms. 2 ft. 6 in.; the lode is large, but unproductive at present. In the 70 fm. level the lode continues to improve, it is 3 ft. wide, of which 20 in. yield rich work. In the north end the lode is 2 ft. wide, more kindly for some time past, and producing some saving work. In the 60 fm. level, the lode is 3 ft. wide, easier for driving and will produce about 5 cwt. of lead per fm. In the north end, in this level, the lode is 18 in. wide, yielding tolerably good work, and leaving a high back, but will set at a deeper level. In the 50 fm. level, north of Charlotte's shaft, the lode is 4 ft. wide, very easy for driving, and producing rich stones of lead. The tribute department is rather improved, but the returns will not exceed the previous month's; many of the men having been ill, and some swept away by the prevailing epidemic.

ESGAR LEE.—I cannot speak of any alteration in the lode in the winze under the shallow adit since my last report; the winze is quite dry, but the lode is very strong for sinking in. The north lode, in the deep adit, is upwards of 6 ft. wide, and we are now driving on the north part; this being in somewhat easier ground, the south part of the lode will at present produce the most lead, and is very wet; but, as we proceed on the north it will, I think, drain the south part dry. We have sent off to Aberystwith, in the last month, 10 tons 2 cwt. of lead ore ready for sampling.

HAWKMOOR.—The lode in the engine-shaft remains the same as last reported—viz.: 3 ft. wide, and yielding 8 tons of ore, or 4s. per fm. We have not taken down the lode in the 20 fm. level; in the 20 fm. level west the lode is much improved, being at least 18 ft. wide, with a leader of ore, about 16 in. big, worth 18s. per fathom—a very kindly end.

HEIGSTON DOWN CONSOLS.—Bailey's engine-shaft progresses rather slowly, the ground being harder and more difficult to penetrate. The lode in the 35 fm. level, east of the cross-cut, maintains its most encouraging character, producing occasional stones of grey copper ore, varying from 15 to 20 lbs. weight and upwards. The 20 fm. level, west of Hiltchins's shaft, is just commenced driving, the men being employed in squaring the shaft, putting in penthouse-shaft, solar, &c., preparatory to the driving of the same.

KIRKCUDBRIGHTSHIRE.—Thalode in the 62 fm. level east is 3 ft. wide, yielding about 6 cwt. of lead ore per fm.; the lode in the west end (same level) is 2 ft. wide; there is a kindly spar coming in with spots of lead, and the lode seems to be opening. At Keith's shaft the lode has improved in size this week, but otherwise much the same, with a few spots of lead through it. The lode in the 50 fm. level has a softer look, being at least 18 ft. wide, and is beginning to make down; in the 40 fm. level, east of the lode, 2 ft. wide, with branches of ore scattered through it. We have shipped off a cargo of lead in the beginning of this week.

MENDIP HILLS.—We continue to press forward with our different operations at Ubley as fast as possible; the carpenters are at present busily engaged in making and fixing the stands for carrying the chains from the engine to the incline plane, as also the necessary wood work for the dressing department, such as pipes for conveying the water to different parts of the floors, gidding machines, buddies, &c. The beds of slag-stuff in Charterhouse Valley remain without any particular alteration, about 15 feet thick, intermixed with some tolerable good slags and a quantity of slimes. We have a good pile of slags prepared for the furnaces, which I expect will be smelted this week.

SOUTH TAMAR CONSOLS.—The shaft is sunk 2 fms. under the 101 fm. level, and the men are now busy in cutting plat, &c., and preparing to fix the plunger-lift. In the bottom of the shaft the lode is 2 ft. wide, carrying a leader of lead, 6 in. wide, and likely to improve. The lode in the north end, in the 101 fm. level, is 2 feet wide, 1 ft. good saving work, altogether is much improved during the last month; there has been but little done in the south end in this level, the men having been ill. In the 90 fm. level south the lode is full 3 feet wide, very thorough, and leaving ground that will set at a low tribute. North of this level, the tram-road is completed to Glyn's shaft. In the 80 fm. level south the lode is 3 ft. wide, with a good branch of lead, very easy for driving, and leaving excellent tribute ground. In the 70 fm. level south the lode is 2 ft. wide, carrying good stones of lead, but is not so productive as it was a week since. In the 60 fm. level south the lode is 2 ft. wide, and is beginning to make down; in the 40 fm. level, east of the lode, there is some good work; and the whole lode is good stamps work. The men are now placed to sink for communication to the 40 fm. level. The pitches generally are looking very well, and the mine altogether much improved; but the quantity of ore raised will very little exceed last month's returns, in consequence of so many of the men having been attacked with the prevailing disease.

SOUTH WALES MINES.—The Bodeall north lode, in the deep adit west, is 1 ft. wide, composed principally of gray slate, but poor for lead. The lode in the Dalwin deep adit, east of Rhynod river, is looking very promising, and is producing some good stones of copper ore and lead, but not sufficient to put a value on.

SOUTH WHEAL TRELAWNY.—The engine-shaft is in course of sinking 3 fms. below the 40 fm. level, with nine men, in which the ground at present is sparry for blasting; also the strata of ground in elvan and capels, mixed with muddle, and rich spots of copper ore. The water is just the same as usual, and everything is in a regular way of working.

TRELEIGH CONSOLS.—Garden's shaft, below the 113 fm. level, sinking in the country, and is down 10 fms. 4 ft. below the 113. In the 90, west of ditto, the lode is 2 ft. wide, with stones of ore, and looking very kindly. In the 80, west of ditto, the lode is 18 in. wide, and worth 4s. per fm.; in the 60, east of the cross-cut, lode 20 in. wide, and worth 2s. per fm. In the winze below the 60, the lode is 30 in. wide, with stones of ore. In the 60, west of Garden's, the lode is 2 ft. wide, with stones of ore. At Wheal

Parent the engine-shaft, below the 30 fm. level, sinking in the country, and is down 3 fms. below the 30. In the 30, east of ditto, the lode is 3 ft. wide, and worth 30s. per fm. In the rise above the 30, the lode is 3 ft. wide, and worth 25s. per fm. In the 30, west of ditto, the lode is 18 in. wide, and worth 2s. per fm. The 20, west of ditto, is suspended for the present, and the men put to sink the under-mentioned winze:—The winze below the 30, lode 2 ft. wide—this winze is to sink on the rise, in the back of the 30; the 1 ft. wide, below the 12, lode 18 in. wide—poor; Nicholson's shaft, below the adit, lode 1 ft. wide, with stones of ore—the men have been employed enlarging the winze, in order to bring down the winze; the adit, east of ditto, lode 1 ft. wide, at present poor.

TRELYON CONSOLS.—The lode now worked upon in Wheal Venture part of these mines is much improved, being worth 18s. to 30s. per fm. In the 22 fm. level west, and the end is being driven at 8s. per fm. The shaft produces sufficient tin and copper to pay for sinking.

WEST WHEAL JEWEL.—In the 57 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is unproductive—drove last month 3 fms. 2 ft.; this end is suspended, and four of these men are put to drive the 55 fm. level; west of Williams's cross-course, on the same lode, we expect, in the course of two or three months, to get under the ore ground that we had in the 70 fm. level and the levels above. In the 47 fm. level, east of Williams's cross-course, on the same lode, the lode is worth 5s. per fm.—drove last month 3 fms. 2 ft. In the deep adit, west of Williams's cross-course, on the same lode, the lode is unproductive—drove last month 1 fm. 5 ft. 6 in. Tregoning's shaft is communicated to the 12 fm. level—sunk last month 2 fms. 3 ft. 6 in.; four of these men are put to drive the 12 fm. level west, on Tolcarne tin lode, and two of the same men to drive the 70 west, on Wheal Jewel lode. In the deep adit, west of Tregoning's shaft, on Tolcarne tin lode, the lode is unproductive—drove last month 1 fm. 1 ft. 6 in. The rise against Tregoning's shaft, in the back of the 12 fm. level, rose last month 1 fm. In the 37 cross-cut, north from Buckingham's lode, drove last month 5 fms. 2 ft. The slopes in the back of the 12 fm. level, west of Pryor's winze, on Tolcarne tin lode, are worth 8s. per fm. In the slopes east of Pryor's winze, in the back of the same level, the lode is worth 10s. per fm. In the slopes in the bottom of the 12 fm. level, west of Tregoning's winze, the lode is worth 16s. per fm. In the slopes in the bottom of this level, east of Tregoning's shaft, the lode is worth 18s. per fm. The slopes are working on tribute.

WHEAL ANDERTON.—The 80 fm. level west is very much improved, lode large, and carrying a leader on the north wall 15 in. wide, producing work of 3000 lbs. of tin for every 100 sacks, 12 gallons each; this is very material, being almost the westernmost part of the mine already developed. There are three lodes south of the lode, operating on to the east of the engine-shaft underlying north (the other south), consequently a junction will be formed within 20 fms. from the east point in the 80, which I propose cutting immediately, having opened on each lode respectively at surface east of the cross-course, very correspondent to the plan I presented some time ago.

WHEAL BENNY.—We have sunk the winze about 6 ft., and intend going 8 fms. deeper before we intersect the lode—set 4 fms., or the month, at 3s. per fm.

WHEAL LAWRENCE.—The lode in the adit and looks as kindly as a lode can, without a course of ore. We have driven south 33 fms., 2 fms. east, and 2 fms. west, and in cross-cutting we have a large stream of water coming from the end, which shows that there is more lode still to the west. We have been running all the week, having got all right, I shall prosecute the adit south as fast as possible. The shaft is sunk from surface 13 fms., the ground very favourable, and producing stones with copper and lead, with a great quantity of muddle, &c.

WHEAL MARY ANN.—Pollard's shaft is sunk 13 ft. under the 50 fm. level; the ground is still hard; the lode in the 50 fm. level north in the shaft is 34 feet wide, and worth 6s. per fm.; in the same level south it is 2 ft. wide, producing good stones of lead. The lode in the 40 fm. level, south of the shaft, is 1 ft. wide, and worth 3s. per fm.; the lode in the winze sinking under the 40 fm. level, north of the shaft, is 2 ft. wide, and worth 4s. per fm. The lode in the 30 fm. level, south of the shaft, is still small and unproductive. The lode in the 60 fm. level, south of the boundary, is 2 feet wide, and worth 12s. per fm. Pollard's shaft is sunk 13 fms. under the 50 fm. level, where the lode is 4 ft. wide, and worth 20s. per fm.; the lode in the 50 fm. level, south of this shaft, is 2 ft. wide, and worth 7s. per fm. The slopes generally are looking very well. Our parcel of ore, computed 65 tons, was sold on the 27th of August to Messrs. Sims, Wiliams, and Co., at 17s. 6s. 6d. per ton.

WHEAL PENHALE.—The engine-shaft is now sunk about 5 fms. below the 20 fathom level, and in the lode we find a very cheering improvement to-day in its mineral productions, principally in copper. The north end, in the 20 fm. level, is much the same as last week. The south end, in this level, has been, during the week, yielding very good work, but to-day I find the lode disordered by a fault. The lode in the 10 fm. level is without much change; the lode in the 10 fm. level, north of the shaft, in this level, is very much improved, yielding beautiful work for lead. The general features of the tribute department are much the same as my last reports have notified.

WHEAL TREHANE.—The lode in the 68 fathom level south is 2 ft. wide, composed of capel, spar, can, and some good lead; a greater improvement was anticipated in this end, but we have had rather hard ground, which has impeded our progress. It is now, however, easier, and the lode is still improving; in the north end in this level the lode is worth at present 3s. per fm. In the slopes in the back of the 62 fm. level the lode still continues as last reported, worth, on an average, 18s. per fm. The lode in the slopes in the back of the 55 fm. level is worth about 1 ton of lead per fm. The lode in the back of the 48 fm. level is yielding from 7 to 8 cwt. per fm. In the cross-cut in the 30 fm. level west we have been opening on two of the most promising branches lately intersected, but finding nothing worthy of further prosecution, we resume the driving of the cross-cut as before.

WHEAL TRELAWNY.—The lode in the 82, north of Phillips's shaft, is 5 ft. wide, and worth 8s. per fm.; in this level south the lode is 5 ft. wide, also worth 8s. per fm. The lode in the 72, north of this shaft, is 3 ft. wide, and worth 9s. per fm. In this level south the lode is 2 ft. wide, and worth 10s. per fm. The slopes in the back of this level are still usually productive. The lode in the 62, north of this shaft, is 4 feet wide, and worth 12s. per fm.; the slopes in the back of this level, both north and south, are usually productive. At Trelawny's shaft, the lode in the 72, north of the shaft, is worth 9s. per fm.; in the same level south the lode is also 4 ft. wide, and worth 9s. per fm. The lode in the 52, north of this shaft, is 3 ft. wide, and worth 8s. per fathom; the slopes in the back of this level, both north and south, are much the same as last reported. At the north mine, the lode in the 55, north of Trehane, is 2 ft. wide, and worth 9s. per fm. Smith's shaft is suspended at present, in consequence of water; it is down 12 fms. below the 40 fm. level, where we have commenced driving both north and south, and where the lode is 2 ft. wide, and worth 7s. per fm. The lode in the 40 fm. level, north of this shaft, is about 1 ft. wide—poor at present. We expect we are near the cross-course, and, therefore, calculate on an improvement shortly; the slopes in the back of this level, both north and south, are just the same as last reported. Trelawny's shaft is sunk 2 fms. 5 feet under the 72 fm. level.

WHEAL VINCENT.—There is no material alteration on any part of the south lode since last reported, as we have been desuing by the side of it. We have cut it in different places, as we have driven on, and find it equal to last report; however, we shall commence taking it down to-morrow. The north is still producing moderate work, just as last reported, which we are taking to the new stamps.

FOREIGN MINES.

ALTEN MINES.—The following is the estimated produce for July:—

Mines.	Tons of Ore.	Per Cent.	Fine Copper.
Reaper.	70	10	4.00
Old Mine.	60	8	4.00
United Mines.	50	6	1.90
Michell's.	22	6	1.43
Mancur's.	6	4	0.24
Carl Johan's.	9	9	0.81
New Lode.	9	5	0.45
Ryder's.	5	4	0.40
Four-house.	3	3	0.04
Cole's.	4	3	0.12
Total.	226		12.69

Mining Report from the 24th July to the 10th August.

United Mines.—The operations at Ward's Mine are still confined to tribute, and no further improvement can be noted. At Woodfall's, some gossan ore of a superior quality is produced from the back of the north lode, where it has been opened to the surface, and the tributers make fair returns from the old adit burrows.

Old Mine.—The whole of the workings at this mine have very encouraging prospects; whilst the workings continue to make satisfactory progress, and yield the usual good returns. The lode in the sink under the adit continues favourable.

Egydes.—No further improvement is observable; the ground is hard, and the progress made in exploring the lode is consequently slow; whilst the returns of ore have not increased.

Mancur's.—Nearly all the usual mining operations are now suspended, and the men are more advantageously employed at other places.

Michell's.—The prospects have latterly improved, and some fair returns of a good quality have been made.

Carl Johan's.—The lode in the sink is still regular, and from 3 to 4 ft. wide, with a kindly appearance, but containing rather less ore than formerly; on the whole, however, the prospects are still flattering. Some small parcels of ore have also been delivered from the other mines, and, with the next pit, I hope the returns will fully bear out the present improved estimate.

Raipas, August 15.—The whole of our bargains at the mine are beginning to wear a somewhat more favourable aspect, and our produce for the last month would certainly have corroborated this assertion; but, unfortunately, the heavy rains that have continually falling for the past eight or nine days, have again interrupted the whole of our bottom workings, and prevented us for the present from realising that quantity of ore which I hitherto anticipated we should be able to accomplish, and which is the sole cause why our produce has not been greater. I expect, however, that, should the weather change for the better, we shall be able to resume the whole of our workings in the 90, which are at present under water, by the end of next week. In the meantime, the tributers are

one of the best new mines I have seen at the surface; we have two large lodes running through the set; about the centre of the set, on the last-named lode, we have a course of ore for about 6 fms. in length, and more than 3 ft. wide, that will produce from 30 to 40 per cent. of copper, with wood for fuel and water for the use of the mine, more convenient than in almost any other part of this extensive mining district. As soon as I can dispose of troops to carry the necessary material provisions, &c., to the mine, I shall send a few miners to work, and am confident I shall have great pleasure in reporting to you the result. Produce for May—Chico, 40 tons; San Pedro, 10 tons; total, 50 tons.

Silva Mine.—At this mine we have broken down the lode in the different levels and winzes, which did not turn out so rich as was expected—say, about 15 tons of ore, of 150 marcos per cajon; but the last 2 ft. of vein broken in the deepest part of the mine was very rich, and more than 1 ft. wide. In the two 10 fathom levels, driving north and south from pique No. 3, we have a pretty vein, about 1 1/2 ft. wide, and producing ore of 100 marcos and upwards per cajon. In labor No. 4, we have also a good lode, 10 inches wide, of 180 marcos per cajon. Our next breaking out will, I believe, be double in quantity and quality what the present is likely to yield.

San Jose del Carmen.—We have also broken out all the lode that was desired in this mine, which has produced about 6 tons of first-class ore, and 15 tons of second-class ore. The first is now being amalgamated, and I think, will yield about 500 marcos per cajon; the second-class we cannot carry as yet for want of troops, all our mule force being employed at present bringing down copper ore to load a ship daily expected. In this mine we have three lodes in good bearings—one level and two winzes, the lode in each not less than 2 ft. wide, and nearly all ore of fair quality.

Carmen Alto and Plometa.—We have, in the last month, found some very pretty stones of ore in breaking down the lode in two different winzes that we are sinking, and the vein looking so pretty, we are next to certain that, when we break out again, we shall not only have a few casual stones, but a regular good bearing. The shares in this mine could now be sold for a very high price.

Loreto.—In the steps sinking in this mine, on the lode, we have found some very pretty stones of ore in the last week, with fine plometa, or horn silver, in sight; and I am expecting to find a great improvement when we break out again.

Merceditas.—We have broken down the lode in the two winzes that we are sinking in this mine; the vein in the north winze yielded several quantities of good ore, and looks very promising to improve, but the lode in the north is poor at present.

Olivia.—This mine has not yet been measured, and, on that account, I have done nothing in it since I addressed you last.

Goia Mine.—Merceditas. In this set, or in that part of it formerly called Santo Domingo, we have a considerable improvement; the vein is now very large, 4 feet at least, and showing spots of visible gold in almost every part. I have sent about 3 tons to be amalgamated, and am in hopes of ascertaining the key before the post leaves. If it yields as much as we are expecting, about 2 lbs. per cajon, we have every prospect of having a good mine here; and when the measurement is concluded, and landmarks fixed, which will be in a few days from this, I intend putting additional force to work in this mine.

Esperanza.—In the last month, a slide came in contact with the principal lode in this mine, dislocated and heaved it out of its natural course; but, by driving a cross-cut, we have cut it again. This happened while I was there, and only a few days since; and I am pleased in stating that it exhibits stones with visible gold; and I am in great hopes that we shall soon get out some good ore from this mine also.

Chacabuco.—We have done but little in this mine since I addressed you last, waiting for the intendente to resume the measurement, and define the rights and settle the claims of the various mine owners in this mineral, when I shall try to embrace the principal part of this set in, as the Merceditas and Santo Domingo. The lode has a very pretty appearance, and, in one of the levels, exhibits visible gold.

Discobrida.—In this mine we have four different labores producing gold, and from which about 10 tons have been broken in the last month, which I hope will be sent to the amalgamation establishment in a few days. The ore we expect will yield about 2 lbs. of gold per cajon.

IMPERIAL BRAZILIAN MINES.—**Bananal, June 18.**—At length I have once more the agreeable duty of acquainting you with a considerable improvement having taken place in this mine since my reports of the 13th inst. You are aware that we have followed the Big Pump vein downward it has generally shown specks of gold, and occasionally it has afforded us "cat caps," and even boxes of work for the mining house. It has at length become much richer, and the 14th and 15th lvs. yielded so much, as to give us 234 lbs. of the precious metal. The auriferous portion of the vein is about 1 ft. in length, and that part of it whence the mentioned produce was obtained is about 6 or 7 ft. in height. In order to extract this, we have dug the vein as far as we can conveniently reach; and, before we can do much more, a couple of days must be devoted to securing the ground with timber, and taking away the rock on either side of the vein, so as to give us more room for working on it again. As the discovery is so recent, I can add but little to the foregoing statement, except that, as in the veins here, we do not find much rich ore, but rather a great extent of poor ore, now broken in sight so far downward as we have yet extended. The rich spot is about 2 fms. above the 14 ft. level, which we are now extending from Thomas's shaft with the utmost speed. At the Magalhães Pit we continue to take out a little work, and the vein has a promising appearance. The matrix of this bunch of gold, as well as of the vein at the Magalhães, is schist, a mineral which we have never before seen accompanying gold, either here or at Gongoi. This discovery, whatever it may be, is the more interesting to me personally, because it would have been eventually worked sooner or later, yet, having been but eight samples, it had been temporarily passed by; I myself directed the vein to be explored in that direction, and, because I was present at the time when success attended our first five minutes' work.

P.S.—Two boxes of work from the Magalhães have come up at the moment of closing my letter.

Gold Report.		Lbs.		Oz.	
Gongoi—from 5th to 23d June	.....	5	5	0	0
Bananal—from 5th to 14th ditto	.....	5	7	10	0
Ditto—from 15th to 22d ditto	.....	43	9	14	0
Total from 1st January—viz., Gongoi.....		85	11	19	0
Bananal.....		139	6	15	0
Total.....		224	17	34	0

NATIONAL BRAZILIAN MINES.—**Cocoes, June 22.**—On the 19th inst. the produce began to improve considerably from, as we supposed, the backs above Hartley's eastern stop; but as no good samples had been taken from there for some time, we placed as many men as could be conveniently employed at that point, to ascertain if the improvement had actually taken place there, or at some other part of the mine, where a gold vein had not been previously discovered; the produce, consequently, greatly increased, but still without obtaining anything like a good sample; by a diligent search, however, and daily taking portions of the lode from various parts of the stop, we succeeded to-day in taking a beautiful sample of gold from the vein. The ground in the eastern end, towards Irving's, has also greatly improved in appearance since the 13th inst., and to-day a good sample of the ore was taken, and the layer now broken through at the breast or middle part of the end; nothing could be more encouraging than this; even the stop just alluded to does not present a more favourable feature for the future operations, for the layer is entire downwards, and from the present working point to the height of the Bandeira level (should it continue as far west as that) it has not been touched, and very likely it has been done nothing to since it was abandoned by the Brazilians, on account of the hardness of the ground at the Cavaco great excavation.

June 29.—We have much pleasure in availing ourselves of the intermediate post, to furnish you with a note of the washings since last I addressed you, which were as follows:

June 25th		Mks.		Lbs.	
25th	.....	2	1	6	0
26th	.....	3	4	3	0
27th	.....	2	0	9	0
28th	.....	2	0	9	0
29th	.....	2	0	9	0
Total.....		11	4	17	0

It is, however, our duty to state that the stamps have not been more than two-thirds supplied, and that the return would doubtless have been still more cheering; the intersection of the last vein in driving the eastern end has greatly improved our prospects, as it is stronger than any we have yet seen, and only requires to be extensively worked upon to enable us, we trust, to continue handing favourable intelligence.

Produce—Cocoes, from 24th May to 3d June.....		Mks.		Lbs.	
24th to 31st May	.....	6	2	7	0
1st to 3d June	.....	13	1	5	0
24th to 28th ditto (4 days)	.....	9	5	20	33
Culaba, from 30th May to 6th June.....		1	4	3	4
6th to 16th ditto	.....	3	0	21	0
16th to 26th ditto	.....	2	0	43	6
Total.....		39	7	54	35

ST. JOHN DEL REY MINES.—**Morro Velho, June 18.**

Gold extracted to date, 6761 oibs., from 39287 cubic feet of sand (being the result of 10 days' stamping); 1721 oibs. per cubic foot. This is somewhat under what I consider the fair average produce of 10 days' stamping, but may be accounted for, from the circumstance that the stone sent up from the mine contained an unusual quantity of kila. What has been since coming up being reported to be of much better quality, I trust the remainder of the month may compensate for the apparent deficiency of the first 10 days.

Stamps working 17 days, average 94 1/4 heads. The supply of stone is without much alteration, but rather improved.

June 27.—Gold extracted to date, 14,299 oibs., from 81501 cubic feet of sand (result of 30 days' stamping); 1753 oibs. per cubic foot. You will see that the hope expressed in my last of an improvement in the produce of the 2d and 3d portions of the month has so far been realized, for while the first 10 days produced only 6761 oibs., the second 10 days produced 7338 oibs.—making together 14,299 oibs.

Stamps working 26 days, average 94 1/4 heads. The supply of stone continues to be quite as good as could be expected.

THE GIRVAN COPPER MINES, Ayrshire.—An extraordinary discovery of rich grey sulphur of copper was made near Girvan, about 20 years ago, and which was explored by a party of working men in the neighbourhood, who after taking out some of the ore at a very shallow depth, abandoned it through the falling together of the ground. The landowners having lately held out some inducements, a party have taken the works in hand; and having cleared out the old shaft, discovered a 6 ft. level, and by driving east and west on the course of the lode, it has given indications that at a depth of probably 10 fms. more, great riches will be obtained. Capt. Rowe, of the Laxey Mines, Isle of Man, has inspected the mine, and reported on it, and states that the lode originally had been very imperfectly explored, but, through the recent workings, a regularly defined lode of grey copper ore was laid open, of a quality and extent sufficient to hold out the most encouraging expectations in depth. The lode is large, from 4 to 6 ft. wide, in a most congenial strata, and abounding with rich sulphur of copper throughout. A little more depth he believes alone necessary to develop a matured deposit of ore, and that the mine will hold down in copper, of a more condensed character and value, and he is led to this conclusion from the regularity and size of the lode, the strata it lies in, and the improvement it has exhibited constantly from surface to its present depth. A sample of the ore has been assayed by Messrs. Johnson and Sons, Gresham-street, and found to contain 40 per cent. of copper, with 2 ozs. 18 dwts. of silver, and 5 dwts. of gold to the ton of ore. It is proposed to form a company for the working of these mines, no responsibility to be involved beyond two-monthly payments, while the shareholder is registered and pays his calls; two trustees to be always in existence, and a manager in London; a general meeting to be held the first Saturday in every month on the general business of the company. Any proprietor being a month in arrears of calls, his shares to be forfeited for the benefit of the remaining shareholders, and by-laws to be arranged by the trustees, and to be binding on the shareholders.

THE ASTURIAN MINING COMPANY.

Sir.—The shareholders in this company were told by their directors, at the last general meeting, that they had great cause for rejoicing at the prospect of a speedy conclusion of the negotiations now pending in Paris. By the arrangement, which they were told was nearly completed, the shareholders (who have paid 15s. per share) are, for a little more than the amount of two calls of 11s. to relinquish to Messrs. Rianares and Co. two-fifths of the profits made by the company, and even then it is doubtful whether they will not be liable to further calls after this money is expended. Can there be any more complete proof of the imbecility of the directors, who have hitherto told us that it was only want of confidence which depreciated the value of the property. If there was any undue want of confidence in the value of the mining property, the whole body of shareholders might have been taken to the Asturias for 1000s., and they would have satisfied themselves of the real value of the mines.

That would have been better than such a sacrifice as is now contemplated. But it was not the value of the property which was really doubtful, but the capability of the directors of the company to exploit it. The directors throw the blame of their failure now on the manager in Spain—now on the Spanish Government; but I more than suspect that their first and most abused manager was the most capable of any that has been sent to the country; and there is, doubtless, much more truth in the allegations made by the Spanish Government in the decree of the 26th of June, than the directors wish us to believe. The Spanish shareholders would not have petitioned their Government to dissolve the company, if they had not seen that, after six years of existence, the company was only less likely than ever to benefit either themselves or the country by their operations. The Asturian Mining Company possessed a magnificent property, with only one drawback—viz., that it was situated some thirty-five miles from the sea coast. The demand for coals in one province of Spain alone is upwards of 200,000 tons per annum, and would have given a return of at least twenty per cent. on the capital required to work it, if conveyed to the coast at a reasonable price; and the iron, if we are to believe the statements of the directors, would sell at fabulous prices; but the directors of the company are satisfied with having encouraged others in the ridiculous project of a railway from Madrid to Aviles (some 300 miles of railway, whose only traffic would have been on the 50 miles nearest the coast); on the formation of a Spanish company to make precisely the railway required for the well being of the mining company, they withhold their cordial and substantial assistance, and now we hear no more of even a possibility of the capital being found for any such purpose.

I have heard that a plan was proposed to them some time last year, by an engineer who had been in the country, for navigating a river which runs at the foot of the mines, by means requiring no expenditure of capital on any alterations in the river; and if such is the case it is strange that nothing should have come to the ears of the shareholders, when their salvation seemed to depend on a market being found for their mining produce.

The commission that has now been named to enquire into the proceedings of the company has much to do. At the last meeting the chairman would on no account allow of a petition being presented to the Spanish Government to rescind the decree of the 26th of June. Would not that make one suppose that the directors are less sure of the correctness of the charges made against them than they would have the shareholders to believe? And is there not some fear of the whole property being confiscated before the completion of the negotiations with the Duke of Rianares, if, as I have heard it suggested, they are not so near their consummation as we are told? Let the members of the commission satisfy themselves at whose door the blame of failure should be laid, let them well consider what would have been the simple course to have pursued to expect success; and if they should find that the directors have acted in perfect ignorance of Spanish law and customs, of mining matters, or of their duty as directors of a joint-stock company, they may, at any rate, yet be in time to save the remnant of the property from being sacrificed by fresh illegalities, just at a time when, as the chairman at the last meeting tells us, "our prospects were never so good, or so likely to give profitable returns, if they had not been so unfortunately stopped," by a decree which he will not allow us to wish rescinded.

Clifton, September 5. ONE WHO HAS SEEN THE MINES.

MINING IN DARTMOOR.

Sir.—As mining in this district has of late much attracted the attention of capitalists, I would bring under notice the improvements discovered in the Old Vitrifer or Birch Tor Tin Mine, which have before been described in your Journal. I am always much gratified to hear of mines looking well in this district, believing that if only one quarter of the money that has been thrown away in foreign adventure had been spent in developing the mineral riches of Dartmoor, much increased advantages would have resulted both to adventurer and miner. East Birch Tor Tin Mine adjoins the Old Vitrifer set to the east, and any one acquainted with mining will, on paying the mine a visit, feel convinced, from the indications and rocks of tin at surface, that large deposits of mineral are to be found in depth. This will shortly be proved, as I hear 50 men are to be set to work on the mine in about two months. Devon Great Tincroft Mine lies to the east of the latter; here, last week, a lode was cut 3 feet wide in the adit level, producing good tinstuff, while the back of the level is only 7 fms. from surface; there is, however, a fine hill in advance, by driving 50 fms. into which will give 140 ft. of backs, and a cross-cut from the adit will intersect eight other lodes, which have produced tin near the surface. This is proved by the stuff thrown up by the ancients, as it is easy to find good stones of tin still in it. The lodes are visible traversing the whole length of the set, 1 1/2 mile on their course in a beautiful decomposed granite, highly favourable for the production of tin. This ground is so kindly, that 80 fms. have been driven at 25s. per fm., at which price the men made good wages. Much more could be said in favour of this set, but any persons feeling interested are invited to see and judge for themselves.—J. PEARSON: Chagford, Devon, Sept. 6.

HOLMBUSH MINING COMPANY.

At a special meeting of adventurers, held at the offices, George-yard, Lombard-street, on Wednesday last, the 5th inst.—Mr. T. HACKETT in the chair—it was resolved, that the report of Capt. Lean be received, and its recommendations adopted, and that in consequence of the erection of an 80 in. cylinder engine, a steam-engine of 50-in. cylinder, with pitwork and appendages, should be disposed of. The following report, from the directors, was read:—

In consequence of the temporary failure of the Flap-Jack lode, and the other parts of the mine not having proved so favourable as the report at the last meeting led them to expect, the directors have thought it right to call a meeting of the shareholders to consult with them upon the present state of their affairs, and to ascertain from them how far they are disposed to co-operate with the directors in carrying on the work now recommended by their agent, who is now in attendance to give answers to any questions that may be submitted to him. He has furnished them with a report which will be read, and by which it will be seen that, in 10 to 12 months, the Flap-Jack lode will be intersected 30 fms. deeper than at present—being now in the 100 fm. level; during which time, according to the best calculation that can be made, the loss on the mine will be 1000s. to 1200s. per month; but in the event of the Flap-Jack lode again proving productive in the 100 fm. level, which may reasonably be expected, or the lead lode, which is said to be more promising than it has been, producing a few more tons per month, in either case the loss would be proportionately decreased. The directors are willing, on the recommendation of Capt. Lean, and with the consent of the shareholders, to go to the extent, as they know about what would be their additional loss, if unsuccessful; and if the Flap-Jack lode should again prove only as good as it was for 8 or 9 fms., they would be enabled to carry out this work without loss. The dues are taken off by the Duchy; and the agent is now in a position to ascertain very nearly the monthly cost, which he has promised shall not exceed 5000s. After the shareholders have heard the report, and obtained every information which the directors and the mining captain can give, it will be then to determine what is best to be done.

The following report, from Capt. Lean, was then read to the meeting:—

Sept. 1.—In compliance with your request, we again beg to submit, for the consideration of the shareholders, a general report of the above mine for a period of little more than five months, therein stating the work performed during that time, and the disappointment we have met with at certain points. At the annual meeting, in March last, certain work was recommended to be carried out, which received the approval of the shareholders then present, with every prospect before us of meeting with ultimate success, and we fully believe that a majority of miners, looking at the prospect in view, would at the time have been more sanguine than ourselves with reference to future returns; but we are sorry to observe our expectations have not been realized near so fully as we thought and could have wished. About last March we had penetrated the great cross-course in the 120 fm. level, and commenced driving north, to intersect the counter part of the lode, with a full expectation of cutting a course of ore, knowing we had one, worth at least 30 ft. per fm., 6 fms. below the 120 fm. level, at the same time, and in close connection with the cross-course; but, to our astonishment, as well as disappointment, the lode, when intersected, was comparatively small and poor, producing stones of copper ore only; and on opening ground westward on its course, it divided in size, and is poor and unpromising—so much so, that we suspended all operations in that level, and we cannot feel ourselves justified in recommending its resumption (at least for the present); the stratum in this level is a dark ironstone, and which is also hard, and not at all congenial for mining.

The 120 fm. level cross-cut south, east of Hithelm's shaft, was continued to intersect the south branch; when first cut through, near a small cross-course, it would produce 1 ton of very rich copper ore per fm.; but in extending the level a few feet only eastward on its course, it became impoverished, occasioned by the hard ironstone on either side of it, which cannot be explored for double the amount of money it will yield in copper ore; and, under all circumstances, it is considered advisable to suspend the work in the 120 fm. level south, on the least course, for a great many fms. very hard and troublesome for exploring; but within the last fortnight it is materially changed for the better, both as it respects the softness of the ground and its produce; it will now yield 5 dwts. of lead ore per fm., the matrix of which is soft white quartz and prill, and is set to be driven, by four men, at 2s. per fm., for one month's stint; this is a very promising lode indeed, and one that is very likely to produce a great quantity of lead, when we consider it is more than 50 fms. north of the 110 fm. level, which level has proved by far to be the best we have explored, and in the bottom of which, 40 fms. further south than the 120, we have a pitch wrought by four men, at 5s. 6d. in the 12, on the value of the lead only, and the most valuable part of the lode is 3 fms. below the bottom of the 120, which, in our opinion, argues greatly in favour of the 120 fm. level. The extreme distance to drive the 120 fm. level cross-cut, to intersect the Flap-Jack lode from the commencement, is 53 fms., agreeable to the dialling and underground of the lode, out of which we have driven in three months 30 fms., through a level 7 ft. high and 4 ft. wide, fixing

tram-roads, &c.; it is again set to drive by six men, at 5s. per fm., and it will stand without being timbered—meant for one month, commencing labour one o'clock on Monday morning, and continuing it until 10 o'clock on Saturday night, in order to push it on as fast as possible to reach what we consider an important and interesting part of the mine. Notwithstanding the unexpected (and we hope but partial) failure of the lode in the 100 fm. level east, it is important for two reasons—first, the course of ore is longer in the bottom of the 110 fm. level than it is in the back of the level—and, secondly, it will be intersected 20 fms. deeper than it has yet been seen, where we may reasonably hope for a much longer course of ore; at all events, the lode cannot be said to have been proved until it is intersected and opened on for some length in this level, as well as in the 100 fm. level, particulars of which we shall notice hereafter. The lode in the 110 fm. level south is 3 ft. wide, composed of soft white quartz, prill, and lead, producing about 5 dwts. of the latter per fm., and is driven by four men, at 3s. 18s. per fm., meant for one month; the slopes in the back of this level were brought by four men, at 9s. in the 12, on the value of the lead only, thereby reducing the tribute, when the silver it produces is taken into account, making nearly one-third difference; the lode in the bottom of the level will set at a moderate tribute when drained from water; as we have before mentioned, the principle part of our lead has been raised from this level, and we are consequently strong in our opinion that the 120 fm. level will be at least as good.

The lode in the 100 fm. level south is 3 ft. wide, composed of soft quartz, prill, floukan, and, at times, stones and spots of lead; but, on the whole, it has been very poor for a great length, and appears to be just on the top of the bunch we have had, and still have, in the 110 fm. level; this level was driven in August month for 32 fms. per fm., by two men, but is for the present suspended, being able to command the ground from below to greater advantage; this level can be resumed at any future period, and great speed could be developed if, should it be thought necessary so to do. The 160 fm. level east of the great cross-course on the Flap-Jack lode, about 34 fms. from the point of intersection, 9 fms. east, our expectations were fully realised, and had it continued as productive as the average of the above distance, in less than 12 months we should have been in a position to have given you dividends, which would have given us real pleasure; such failures are numerous that have occurred in a similar way, and will continue to be found as such to the end of mining, more or less, and are beyond the skill of man to avoid; the lode in the back of the level, where it is stopped, is 3 ft. wide, and will produce 1 ton of copper ore per fm., of good quality, the lode is 30 fms. wide, composed of spar, mudiell, soft kila, with spots of yellow copper ore, and we hope, ere long, it will be found as productive as it ever was; it is set to drive by four men, at 4s. per fm. In referring to a copy of our report, dated 24th March, 1849, we found our estimate of returns to be made as follows—viz.: 40 tons of copper ore per month at, say 6s. 10s. per ton, and 12 tons of lead ore, at 16s. per ton. The first parcel of copper ore we sold above the above date was 19th April following, 83 tons, which made a produce of 84s. at 101s. 5s., carrying 5s. 6d. add carriage 5s., net value 84s. 3s. 6d. The next parcel of copper ore we sold was on the 21st June following, 84 tons, produce 85s. standard 84s. 15s., price 4s. 15s. 6d., add carriage 5s., net value 84s. 6s. 6d., being a difference in that short time of 12s. 10s. less in the standard, and 3 ft. in the produce, hence the falling off, to a considerable extent, in the price of our copper ore. Our last parcel sold was 76 tons, which made a produce of 81s. standard about 100s., price 8s. 5s. 6d., add carriage 5s., net value 81s. 15s. 6d.; average of the three parcels about 81s. 6d. per ton. 30y can that will pay for being raised. Our lead ore, on the whole, never looked better, or was more productive than it is at present, and if any addition can be made to the number of tons of lead estimated on, we will most willingly bring the same to market, to compensate for the falling off in the copper; also, the strictest attention shall be observed to the cost in every particular, and we will effect all the saving we possibly can, without using false economy, which in mining is a very great evil. We again hope, and trust that ere long, it will be our privilege to present you with a brighter and a far more pleasing report than it is in our power, conscientiously, at present to give you.

Thanks were voted to the directors and Capt. Lean, when the meeting adjourned.

COOMBE VALLEY MINING COMPANY.

At a special meeting of adventurers, held at the White Hart, Coggeshall, on the 27th August—Mr. T. BATT, in the chair.—The accounts were examined and passed, showing—Balance from last account, 13s. 8s. 8d.; arrears of former calls, 62s.; calls made 9th March and 22d May, 816s.; rent of cottages, &c., 9l. 9s. 10d.—900l. 12s. 8d.—By labour cost for six months, to August 29, 592s. 13s.; merchants' bills, 129s. 16s. 8d.; calls unpaid, 116s. 5s. 11d.; sundries, 39s. 5s. 4d.—leaving balance at bankers, 281s. 1s. 9d.—The balance-sheet of the receipts and expenditure from the commencement showed—purchase of Coombe Valley estate and expenses, 273s. 10s.; Crackington ditto, 944s. 3s.; preliminary expenses, 18s. 6s. 8d.; timber and machinery, 329s. 15s.; labour cost, 1937s. 12s. 9d.; merchants' bills, cartage, freight, commission, and miscellaneous, 502s. 2s. 5d.; rent and expenses, wharf and quarries, 189s. 2s. 4s.; secretary, printing, advertising, &c., 380s. 3s. 4d.; solicitors, 33s. 5s.; assets in slate, calls unpaid, &c., 226s. 7s. 2d.—leaving balance, 92s. 11s. 9d.—4491s. 10s. 6d.—By calls, 4080s.; liabilities, 179s. 10s. 6d.—leaving balance in favour of the company of 162s. 9s.—The following report was read:—

The committee, in making their report to the special general meeting of the shareholders, wish to draw their attention to the present position and future prospects of the company. The deputation appointed by them—viz., J. Denney, and A. Malcham—to visit the quarries, were dissatisfied with the manner in which they were worked by Capt. Griffith Jones, neither did they think the men did their duty under his management. The committee, therefore, thought it necessary to make an entire change in the management, and have accordingly discharged the present set of men, and have given Capt. G. Jones notice to leave the service of the company at the expiration of his agreement. The deputation expressed their high opinion of the value of the quarries, and in this view they were confirmed by the report of Capt. G. Sampson, which was laid before the meeting. The great capabilities of the quarries and the value of the dividends, in the situation, enable them to be worked with great economy, and, now that they are fully opened, we believe with a large profit. These views were confirmed by tenders which have been received for making the slate for half the price that it is selling for in the market. But they would recommend that a small harbour be made, which would facilitate the shipment of the slate, and greatly lessen the expense, and enable the company to obtain vessels for much less freight. Our lease from Lord Rolle is highly favourable for carrying into effect these and other improvements. In order to carry out these views, which the committee think necessary for the success of the concern, and to furnish working capital, they advise that an additional number of shares be created forthwith, and offered to the shareholders and public generally.

It was resolved that 500 new shares be created, and offered to the shareholders and public generally, at 3s. 10s. per share, to be paid by a deposit of 2s., and by three calls of 10s. each, at intervals of two months, and that the secretary be requested to negotiate with parties for the taking up of the same.

WHEEL CALSTOCK MINING COMPANY.

At a meeting of adventurers, held at the mine on the 22d August, the accounts were examined and passed, showing—Cost to Feb. last, 1956d. 3s. 7d.; ditto from March, April, May, and June, 3077s. 11s. 3d.—2263s. 14s. 10d.—By calls, 2092s. 10s.—leaving balance against the mine of 171l. 4s. 10d.; to which add calls due, 39s. 11s. 6d.; and balance, 9s. 3s. 8d., makes 220l., which is covered by an advance from the Naval Bank, and which makes the assets and liabilities stand thus—Cash to Naval Bank, 220l.; various merchants, 511s. 0s. 11d.; mine cost to July, 861s. 7s. 11d.—817s. 10s.—By balance in hand, 9s. 3s. 8d.; available assets, 39s. 11s. 6d.—leaving balance against the company of 768s. 13s. 8d. It was resolved that further application should be made to the Naval Bank for an advance of 120l.

The following report, from Capt. W. B. Colom, was read:—

August 22.—In laying before you the report of this mine, I have to refer you to the last general meeting held in April last, at which time we were anxiously waiting to be put in possession of the Danescombe set; this, I am happy to inform you, has at last been completed to our entire satisfaction as regards terms, although not so soon as was then anticipated, which has been the means of retarding our progress in getting in the necessary machinery, and getting the ore ready for market, by two months. Since operations have been commenced in Danescombe, we have been busily employed in clearing the whole of the adit level through the valley, and westward to where the back is stopping for ore; after this work was finished, the level has been cut wider, and a railroad laid from surface 70 fms. through the level, for the purpose of bringing out the ore—this is now in operation. A 40-foot wheel has also been erected, and a grinder attached for crushing the ore; this wheel will also be made use of for driving a set of stamps. A 50-foot wheel is also in course of erection for an engine-wheel; to this wheel a deep cutting has been brought up 20 feet deep in solid rock; in bringing up this cutting a large and promising lode was discovered, composed of fluor-spar, mudiell, and rich yellow ore; the underlay is north, and will intersect the main lode at no very great depth. The ground between these lodes is also full of branches and small lodes all carrying ore, and to all appearance will form one lode in depth. In the stopes in the deep adit west the lode has maintained its character of a large gray lode; from the quantity of ground stoped away, we may calculate the quantity of ore broken at from 100 to 120 tons. In driving east under Kelly on the course of the lode, we have found it to be of a most flattering character, composed of black and yellow ore, fluor-spar, and mudiell, with a little malachite copper; judging from the character of the lode in this place (being near where we find, deep), we may fairly calculate on a good lode under. In the present end the lode is disordered by a course of granite; since this cross-course passed through the lode, the bearing of it has changed, it is now going towards the north lode, which is the one the old miners returned all their ore from; where these lodes united westward it made the bunch of ore in the deep adit we are now working on—a similar result may therefore confidently be expected where they unite in the east level. Our main object is to get below the deep adit level, so as to get under the ore ground discovered; for this purpose a pair of shafts are now engaged in clearing up the old main engine-shaft, preparatory to fixing a lift of pumps in the same, and I hope will be down to the 30 fm. level in the course of five or six weeks (30 fms. being the reported depth of the engine-shaft). From the ore left by the old miners above the adit level, we may expect to find in the old workings below some, very productive ground, so that we confidently expect having a good lode to work on, as soon as the shaft is cleared. Besides the

STOCK EXCHANGE, Saturday morning eleven o'clock.

Bank Stock, 7 per Cent., 200	Belgian, 44 per Cent., —
3 per Cent. Reduced Ann., 92 1/2	Dutch, 24 per Cent., 84 1/2
3 per Cent. Consols Ann., 92 1/2	Brazilian, 5 per Cent., 80 1/2
34 per Cent. Ann., 94 1/2	Chilian, 3 per Cent., —
Long Annulities, 8 1/2	Mexican 5 per Cent., ex Cap., 27 1/2
India Stock, 10 1/2 per Cent., 25 1/2	Russian, 5 per Cent., 107 1/2
3 per Cent. Consols for Acc. 92 1/2	Spanish, 5 per Cent., 18
Keech, Bills, 1000s., 14d. 30 42 pm.	Ditto 3 per Cent., 34 1/2

Mines.—A fair amount of business has been transacted this week in the mining share market; and from the general improvements in the mines, and advance in the standard, we may reasonably expect a proportionate increase. The inquiries for shares in our leading and dividend-paying mines have been active; but sellers are generally seeking higher prices, and actual business is thereby delayed, by the necessary negotiations which are going on.

East Wheel Rose, West Caradon, and South Wheel Frances, have paid their bi-monthly dividends since our last notices, and have created buyers in consequence. **Devon Great Consols, South Bassett, North Pool, West Seton, South Tolgus, and Treviskey and Barrier**, are being sought for at or about former quotations.

Shares in the following mines have changed hands during the week:—East Wheel Rose, Devon Great Consols, South Tamar, North Pool, West Caradon, Mary Ann, Treilawny, Bedford United, Tamar Consols, South Molton, Kingsett and Bedford, Trebah, South Josiah, Cwm Erddin, Camborne Consols, Mendip Hills, East Buller, Wellington Mines, South Tolgus, Wheel Comfort, Treleigh.

West Caradon account for May and June was held on the 30th of August, when a dividend of 2s. 10s. per share was declared. The financial statement shows a profit of 292s. 18s. on the two months' working, which, with balance from last account, gave a balance in hand of 2061s. 11s. 10d.; after payment of dividend, a credit of 1421s. 11s. 10d. is carried to next account. The mine is stated to be in a progressing and highly satisfactory position.

At the East Wheel Rose meeting, a dividend of 8s. 4d. was declared, being 30s. per share on the two months' working, carrying balance of 2716s. 19s. 4d. to credit of next account. The sale of silver-lead ores for May and June realised 10,600s. 19s. 1d., and the mine is represented to have much improved in her bottom levels, especially in the 120, south of the engine-shaft.

South Wheel Frances account for June and July was held on the 3d instant. The profit for the two months amounted to 1250s. 9s. 4d., which, with balance from last account, gives a credit of 1897s. 4s. 1d. A dividend of 10s. per share was declared, leaving balance in pursuer's hand of 657s. 4s. 1d.

Coombe Valley Slate Company audited their accounts on the 27th August, showing their assets in slate, calls unpaid, and cash at banker's, at 478s. 18s. 11d. For the more efficiently carrying on the works, an issue of 500 new shares was resolved on, at 8s. 10s. per share.

At Craddock Moor meeting, for May and June, a call of 10s. per share was made, for further operations and discharging the balance against the company (24s. 7d.)—the principal operations being confined to the sinking a new shaft from the surface, which is now down 7 or 8 fms. between Dunstan and Vivian's lodes. Several veins, or branches, impregnated with ore, have been intersected, underlying towards Vivian's lode.

At the Gonnemena meeting, a balance of 76s. 13s. 3d. was found in favour of shareholders. The mine is represented to be in an improving position. In the 60, or Gilpin's, the lode is producing 2s. tons of ore per fathom, and about 15 tons of ore have been broken from the north lode. Other operations are being carried on, with a view of bringing some important points into efficient working order.

At Wheel Mary Consols meeting, it was resolved to discontinue further operations, and a committee was formed, for the purpose of disposing of the mines and materials—a loss of 397s. 11s. 5d. having been sustained since the account meeting in March last.

At the Calstock meeting, the accounts showed the entire costs from the commencement to have been 2263s. 14s. 3d., leaving balance against the mine of 768s. 8s. 8d. A new set had been obtained from the Duchy on favourable terms, and expectations of good results were entertained.

At the Par Consols meeting, the profit on four months' working to end of June was shown to have been 6260s. 8s., which, added to balance at last account, made in hand 10,708s. 13s. 5d., from which a dividend of 50s. per share was declared, amounting to 6400s., leaving a balance in favour of shareholders of 4308s. 13s. 5d.

At the Holmbush special meeting, it was resolved to adopt the recommendations in Capt. Lean's report, which will be found in another column. These recommendations are to further explore the Flag-jack lode in the 100, and to cut it in the 110 and 120 fm. levels, which is estimated to cost 500s. per month; but great expectations are entertained that a good proportion of this will be covered by the ores raised, and the greatest loss which can happen is known at the outset.

In the foreign share market there has been considerable transactions during the week. The advices from most of the Brazilian mines, received on the 5th, are of the highest importance; and have created a demand, especially for Imperial Brazilians, which have advanced. National Brazilians have also been in request; and several transactions have taken place. In United Mexican, Copiapo, and St. John del Rey, many bargains have been effected.

By Her Majesty's packet, Patrel, dispatches have been received by the Imperial Brazilian, St. John del Rey, and National Brazilian Mining Companies.

The Imperial Brazilian advices are down to the 22nd June, and furnish the most gratifying intelligence as to the improvements at Bananal. The gold report gives the returns from Gongo, from 6th of June to 22d. 9 lbs. 5 ozs. 5 dwts.; Bananal, 5th to 22d. 49 lbs. 5 ozs. 12 grs.—58 lbs. 10 ozs. 17 dwts. The total from both mines, since the 1st Jan., is 225 lbs. 6 ozs. 13 dwts. The big pump vein has been gradually improving; and on the 14th and 15th of June, 23 1/2 lbs. of gold were raised, and the lode continues productive in sinking. The Magalhães lode also holds out a promising and encouraging appearance.

The National Brazilian report is to the 29th June; and although improvements were fully anticipated for some time past, nothing positive was seen before the 12th June in the eastern end towards Irving's lode, and on the 19th above Hartley's eastern slope, from whence some excellent work has been returned, and the prospect of continuing very gratifying—the produce in four days amounting to mks. 9 5 7 20; the total from Cocoes, from the 24th May to the 28th June, mks. 33 3 1 49; and Cuiba, from the 26th May to the 26th June, mks. 6 4 3 68; total mks. 39 7 4 5. St. John del Rey letters are to the 27th; and the gold extracted to that date gave 14,299 oits, from 815-61 cubic feet of sand; and the supply of stone continues to equal the expectations of the manager. The profit for the month of May we gave last week, amounting to 8698s. 12s. 1d.

The Copiapo report for May has been received, the returns for that period being given at 59 tons. The Checo is represented to have gradually improved; in the 20 and 40 fm. levels they have courses of ore of a rich quality. The San Pedro Mine continues as last reported; the stopes in the backs of the 5 and 10 fm. levels still productive. The new copper mine, lately ceded to the company, is represented to hold out the most encouraging and gratifying prospects. The silver mines of Al Fin Hallada and San Jose del Carmen are reported to be highly productive, and from the prospects, greater returns are anticipated. The Carmen Alto and Plomiza, and the Loreto and Merceditas sets are producing some rich work. The gold mines of Merceditas, Esparanza, Chacabuco, and Descubridora possess large and productive lodes, gold being visible throughout. Several tons of ore are ready for amalgamation; but its precise produce has not yet been ascertained, although it is anticipated that 2 lbs. per cajon will be the yield. A full report will be found in another column.

The Alten report for July was received yesterday; the estimated produce for the month is 226 tons of copper, and the agent's report is more encouraging than for some time past.

The Peninsular and Oriental steam-ships, *Pacha* and *Eria*, arrived at Southampton on Sunday, the 3d inst., the former bringing 13 packages of specie on freight. The Royal Mail steam-ship, *Des*, arrived on Tuesday, bringing the West India and Pacific mails, and having on freight 364,951s., or about 193,000s. sterling—about 8600,000 was in gold dust from California. The Ocean Steam Navigation Company's ship, *Hermann*, arrived on the 3d, bringing on freight 10 packages of specie, about 320,000s., and 30,000 five-franc pieces for Havre. Her Majesty's packet, *Patrel*, arrived at Falmouth on the 2d, with the Brazilian mail, and bringing on freight 25,000s. in specie. The Peninsular and Oriental steam-ship, *Sultan*, arrived on Thursday, having on freight specie to the value of 77,770s. and 37 tons of copper and general cargo.

Shares sold during the Week.

MISCELLANEOUS.—Auction Mart, 25; Australian Agricultural, 16; Upper Canada Bonds, 80; City Navigation, 90; Equitable Reversionary, 104; Hungerford, 45; Peninsular and Oriental Steam, 74; Reversionary Interest Society, 90; Royal Mail Steam, 55-4; South Australia, 13.

JOINT-STOCK BANKS.—Australasia, 25; Union of Australia, 25-4; Union of London, 104; London Joint Stock, 104.

ATROCIOUS CONDUCT.—It is incredible to what lengths the blind passions even of great public companies will lead them.—The public narrowly escaped a frightful catastrophe on Tuesday, in the opening of the Great Northern line, when the trains were about to run from Doncaster to Leeds. The superintendent at Doncaster, having heard it whispered that something was going on at the junction of the Doncaster line with the Midland Railway at Methley, sent over a special engine before the trains, and found the servants of the Midland Company had removed the points at the junction, so that had the train proceeded thither, it would have inevitably run off the road. This, we understand, was done without any notice, in consequence of some dispute between the two companies, for which the Midland Company would have made the lives of her Majesty's subjects pay. Such an outrage must surely meet with its due punishment.—*Doncaster Chronicle*.

MINING INDUSTRY OF AUSTRIA.

The Austrian Government has lately published a return of the mineral produce of the Enns, Salzburg, Illyria, Galicia, and Bukovina during the year 1848, and of Banat and Croatia in 1847. The mountain productions of Salzburg amounted in the past year to 22,784s., and consisted of 478 ozs. of gold, 1660 ozs. of silver, 1265 cwts. of copper, 639 cwts. of vitriol, 32,785 cwts. of rough iron, 3236 cwts. of ghisla, 1285 cwts. of sulphur, 1091 cwts. of arsenic, 500 cwts. of cobalt ore, and 861,166 cwts. of coal. Along the Enns the mineral produce amounted in 1848 to 34,060s., consisting of 1,117,195 cwts. of coal and ampetite, 720 cwts. of alum, 415 cwts. of graphite, 29,674 cwts. of raw iron, and 1950 cwts. of ghisla. The mountain produce of Illyria, comprising Carinthia, Cragno, and the coast, amounted to the value of 281,559s., and consisted of—

Gold	.....	Marks 64	.....	£ 214
Silver	.....	.....	.....	31
Cadmium and zinc ore	.....	Ochs 9,958	.....	242
Quicksilver	.....	.....	.....	53,814
Lead	.....	665,210	.....	161,845
Cheese	.....	598,592	.....	142,223
Ghisla	.....	22,843	.....	9,909
Ampetite	.....	839,126	.....	10,703
Antimony	.....	175	.....	145
Lead	.....	1,011	.....	79
Sulphur	.....	40	.....	10
Zinc	.....	2,833	.....	2,125
Alum	.....	401	.....	200
Vitriol	.....	320	.....	20

The mountain productions of Galicia and Bukovina in 1848, amounted to 41,799s., and consist of—

Raw iron	.....	Cwts. 64,904	.....	£ 217,058
Ghisla	.....	22,964	.....	10,974
Coal	.....	35,588	.....	230
Silver	.....	468	.....	938
Copper	.....	1,851	.....	7,448
Lead	.....	137	.....	137
Litharge	.....	561	.....	654
Raw Sulphur	.....	4,902	.....	1,735
Purified ditto	.....	6,382	.....	2,625

The mineral productions of the Banat, in 1847, were—104 marks of gold, 2759 marks of silver, 6223 cwts. of copper, 521 cwts. of zinc, 52,737 cwts. of raw iron, 13,277 cwts. of ghisla, 16,553 cwts. of iron in bars, 465 cwts. of copper, 2065 cwts. of copper, and 447,686 cwts. of coal. The produce of 1848 was 2533s. marks, and 4 lots of silver, and 5195 cwts. of copper. The quantity of other produce has not been returned. Croatia produced in 1847, 4164 cwts. of sulphur. The chemical establishment of Nussdorf, near Vienna, produced in 1848, 6967 cwts. of simple sulphuric acid, and 5350 cwts. of concentrated, 14 of nitric acid, 122 cwts. of aquafortis, 464 cwts. of muriatic acid of first quality, and 81 cwts. of second quality, 40 cwts. of ammonia, and 353 cwts. of sulphate of soda—the total of the estimated value of which is 3221s. We shall, in our next, give some interesting statistical returns of the produce and coinage of the precious metals in the same country.

COMPANY OF COPPER MINERS IN ENGLAND.—We understand that the labours of the committee, of which Mr. Gilbertson is the chairman, are progressing satisfactorily, and that they will shortly be able to lay before the shareholders, and all parties concerned, a definite plan for the resuscitation of the company. At present great difficulty exists in reconciling the interests of the debenture and shareholders; this has not been anticipated, as in most cases the largest debenture-holders are heavily concerned as shareholders, and consequently supposed to have identical interests. A deputation from some Liverpool shareholders waited on the Court of Assistants, a few days since, the result of which has not yet transpired.

QUEENANGEN MINES.—The produce of the mines, according to the last report, had much improved, the copper ore being brought to grass averaging from 12 to 18 per cent. The management of the mines is vested in a section of the directors of the Alten Mining Association, John Labouchere, Esq., being the chairman of both companies; the proprietary, however, is distinct, and, we believe, the Queenangen Mines as yet are in the hands of a few parties.

MINING IN THE ARCTIC REGIONS.—Among the products brought from these regions by the expedition under Richard Chancellor, dispatched by King James I., in 1605, was 30 tons of lead ore, from Cherry Island, near Spitzbergen.

CURRIER SILVER-LEAD MINE.—At the Stannaries' Court, in this case, Mr. Stokes had obtained a rule nisi for sale, and was now in a position to move to make it absolute; but rules absolute for sale had previously been obtained by Mr. Simmons, and Mr. Stokes wished to know whether he could move to have this case consolidated with Mr. Simmons's. The Vice-Warden gave judgment on the point, the substance of which was, that when a decree of sale was granted, it stopped the further proceeding of all other motions. A creditor, who had obtained a decree of payment, was also recognised by the court; but if a creditor had only filed his petition, he must proceed in the same way as another creditor. There was, however, great improbability that he could be defrauded; for in a very short time after the court had taken possession under a decree of sale, advertisements were issued, and the creditors came in to prove their debts; and the moment a creditor had made affidavit and proof of his debt, he was as much noticed by the court as the creditor who had obtained a decree of sale, or a decree of payment.

WHEAL CURRIER.—At the Stannaries' Court, Mr. Roberts and Mr. Stokes moved to confirm the registrar's report in this case. This was a creditor's petition; and the concern had been wound up in the Court of Chancery, though the Court of Stannaries had possession of the mine and materials before application was made to the Court of Chancery.—The Vice-Warden remarked, that this Court and the Master's Office in Chancery had been concurrent, and inquired whether the result had been beneficial?—Mr. Roberts replied, that it had been very beneficial; a sale had taken place in the usual way, and the creditors had come in and proved their debts; there being among them a great number of small creditors.—The Vice-Warden asked if this was an instance, when any mines were wound up in Chancery, of the ease with which that Court could use the machinery of this Court according to its discretion?—Mr. Roberts said it was an instance; in this case, 20s. in 11. had been paid; and there was a surplus of 350s., after meeting all expenses.—Mr. Stokes agreed with what Mr. Roberts had advanced; and, as an instance of the utility of the course of proceedings, he said, if this Court had not interfered to effect a sale, the Court above would have sold the machinery at 1000s. less than it had now realised.—The report was then confirmed.

NEWQUAY RAILWAY AND EAST WHEAL ROSE.—On Saturday week, Mr. J. T. Treffry invited to a dinner, at Clemen's Hotel, Newquay, the owners of the land on the line of the East Wheel Rose branch of the Newquay Railway, and the agents and adventurers in the mine. At two o'clock about 50 gentlemen set down to an excellent repast, Mr. Treffry in the chair, the vice-chairmen being Mr. Pease and Capt. Puckey. After the cloth was removed, the usual loyal toasts were drunk, and among others were "Prosperity to East Wheel Rose," "The lords and adventurers of East Wheel Rose," and others. Great credit was awarded to Mr. Treffry, for the spirited works he had carried, and still was carrying, out in the county—indeed, works so gigantic that few single individuals would have ventured on them; that gentleman had, however, persevered, and in this last instance he was carrying a line from the Bristol to the English Channel, a distance of 20 miles, and forming a harbour of refuge for the mariner, a greater work than was probably ever undertaken before by a single person. The greatest harmony prevailed, and the company separated highly delighted with each other.

HIGH LEVEL BRIDGE OVER THE TYNE.—The deflection perceptible from the weight of a train of 200 tons on the newly opened structure does not exceed three-tenths of an inch, the weight being a much greater one than the bridge will ever be required to bear.

ELECTRIC TELEGRAPH.—The French Government have authorised the establishment of a line of telegraph between Calais and Boulogne, which is intended to communicate with a submarine one across the Channel with the one at Dover. The telegraph at the Post-office, for communicating mail intelligence to and from the outposts, has just been opened in St. Martin's-le-Grand. The trial of an underground telegraph, with the wires enclosed in tubes of gutta percha, is being tried between Brussels and Malines.

THE MUTUAL PRINCIPLE IN LIFE ASSURANCE.—In mutual offices there are no shareholders, the policy holders themselves constituting the company, amongst whom the profits are thus divided; and a policy in such offices has been known to increase in value no less than 600 per cent.; while with proprietary companies, of course the 500 per cent. would have been divided among the shareholders, the value of the policy remaining as at first, without the slightest increase.—*Builder*.

ANNUAL DINNER TO THE GAS INTEREST.—On Tuesday last, Mr. N. Defries gave his annual dinner to gentlemen connected with the gas manufacture and the fitting trade, and friends, which was supplied at the Highbury Barn Tavern, in Mr. Hinton's best style. On the removal of the cloth, and doing honour to the usual loyal toasts, the health of the directors and officers of the metropolitan gas companies was drunk, which was duly responded to by Mr. Gore, of the Chartered Gas Company. He said, they were all deeply indebted to Mr. Defries for these meetings, which brought together the men employed in the retort house, and those on whom so much depended, for rendering available out of doors the gas which had been made. He also alluded to the last new company, and advocated cheap gas, but said it was necessary to understand what cheap gas meant—it must not consist in ruining those who conducted the process. Dr. Bachliff's health was drunk, who acknowledged it, and proposed the health of Mr. Defries, who said, it was gratifying to find so many friends of the dry meter present; there were now upwards of 30,000 of these metres in use, of which 8000 belonged to the Chartered Company, and of this large number, a greater portion of which had been in use for years, only 106 had required repairs. After some other toasts interesting to the trade, and much conviviality, the meeting separated, highly pleased with the evening's entertainment.

3d. per ton is all that is to be paid. A dressing pane are also engaged getting ore ready for market. The advantages possessed by this are not, I believe, equalled by any mine in the country, with a quay in the sett for sending away produce and bringing up materials; this will effect an immense saving in horse labour, besides having a good water-power for machinery; and whenever it will be found necessary to erect a steam-engine, there is an engine-shaft 65 fms. deep under the valley, and an engine-house built. By making use of these we can at any time cut our main lodes by a cross-cut of about 70 fms. north, the lodes underlying towards this shaft.

EXMOOR WHEAL ELIZA MINING COMPANY.

At a meeting of shareholders, held at the mine, on Monday, the 3d instant the following report, from Capt. Whitford, was read—

Sept. 3.—In presenting before you the present position of the operations and prospects immediately associated with this mine, I am unavoidably driven to call some of my former reports. Since your last meeting, an important alteration has been effected in the machinery. The cross-cut in the 24 fm. level has been driven north about 7 fms., together with 2 fms. 3 ft., which were driven previously—making the whole length of the cross-cut from the engine-shaft to the north lode 9 fms. 3 ft.; at a little south of the lode some branches of gossan and sulphuret of copper, of a high per centage, were intersected and passed through, which will fall in with the lode in driving east; at the point of intersection, the north lode is about 4 ft. wide—the principal part of which is mundaic, with oxides of copper; considering its character, and the surrounding stratum in which it is located, nothing can be more inviting, although not at present rich. Several fathoms have also been driven on the caunter lode, which, at the present depth, is still a mass of gossan, impregnated with copper; we have likewise driven south about 2 fathoms towards the south lode, which produced fine specimens of copper in the level above, and which is highly probable will be cut before the next meeting, and I hope and believe, with a little more outlay, you will be amply remunerated.

WHEAL BENNY MINE.

At a general meeting of adventurers, held at the offices, King-street, Cheap-side, on the 6th inst.—**RICHARD THORNTON BROWN, Esq.**, in the chair—the circular of the pursuer convening the meeting, and his authority to the secretary to act for him, and on his behalf, having been read, the balance-sheet was presented and passed, subject to usual audit. The following is an abstract:—Calls, 3910s. 13s.; liabilities, including July cost, 133s. 3s. 3d.—4048s. 16s. 3d.—Cost at the mine to the end of July, and in London to the end of Aug., 3978s. 6s. 3d.; assets, 65s. 10s.—4048s. 16s. 3d.

Letters of a very encouraging character, as to the probability of shortly obtaining ore from the Benny lode, were read. There being 74s. shares, out of 256 into which the mine is divided, forfeited for the non-payment of calls, it was resolved that the said shares be offered to the remaining adventurers, *pro rata*, subject to the payment of all future calls.

Thanks were voted to the chairman for his attention to the interests of the mine, and the meeting separated.

CHADDOCK MOOR.—At a meeting of adventurers, held at Liskeard, on the 30th August, the accounts were examined and passed, showing—Labour cost May and June, 44s. 10s. 7d.; merchants' bills, 16s. 4s. 3d.—60s. 14s. 10d.—By balance last account, 36s. 13s. 3d.—leaving balance against adventurers, of 24s. 1s. 7d.—A call of 10s. per share was made, and the following report was read:—"Agreeable to the decision of the last meeting, I put the men to sink a new shaft from surface on the cross-course, which we find to be near 7 ft. wide, with two good walls about vertical. The shaft is now between 7 and 8 fms. deep, and about 3 fms. under the adit level. The north end of the shaft is about 3 ft. from Vivian's lode, and the south end about 5 fms. from Dunstan's lode, which I expect will be in the shaft when we are 10 fms. under the adit. We have met with several small veins in sinking, each of them impregnated with ore—their underlay is towards Vivian's lode. The price for sinking at present is 7s. 10s. per fm."

EAST WHEAL ROSE.—At a meeting of adventurers, held on the 31st Aug., the accounts were examined and passed, showing—Balance from last account, 2717s. 4s. 5d.; lead ore sold May 11, 2281s. 10s. 4d.; ditto May 18 (Oxnamas) 288s. 0s. 1d.; ditto May 26, 2320s. 18s. 5d.; ditto June 8, 1910s. 18s.; ditto June 12 (Oxnamas and North Wheel Rose), 726s. 19s. 11d.; ditto June 15, 2377s. 12s. 10d.; Cargill's adventurers for supplies, 177s. 7s. 8d.; ditto three-quarters profit May and June, 213s. 4s. 2d.; ore raised in June, sold in July, 700s.—15,708s. 15s. 10d.—By labour cost for May, 2197s. 15s.; ditto June, 2394s. 18s.; merchants' bills, 1651s. 0s. 6d.; income tax, 100s.; lord's dues, 645s. 3s. 6d.; surgeon and club, 62s. 19s.; J. T. Treffry, Esq., on account of railway carriage, 100s.—By dividend 30s. per share, 3840s.—leaving balance now in hand, 2716s. 19s. 4d.

GONAMENA.—At a meeting of adventurers, held at Liskeard, on the 30th August, the accounts were examined and passed, showing—Balance last account, 41s. 4s. 3d.; call, 128s.—169s. 4s. 3d.—By labour cost May and June, 76s. 13s. 2d.; merchants' bills, 16s. 12s. 1d.—leaving balance in favour of adventurers of 75s. 19s. The following report was read:—"Taylor's lode, in the 17 fm. level east, is small and poor. The 38 east is poor also; but the western end in this level is improved; the lode in the present end is 6 1/2 ft. wide, with good stones of ore. At Gilpin's, in the 60, the lode in the present end produces 2 tons of ore per fm.; we have driven this level about 7 fms. in ore, the produce of which is upwards of 20 tons, which we have now ready for sampling, with 15 tons now at Looe from the north lode, making altogether about 40 tons, worth 7s. per ton. We hope shortly to be able to commence the 80 cross-cut north from West Caradon, to intersect Gilpin's lode in that level, which may take four months, and by that time we expect to have driven the 60 east far enough to commence a rise in the back, to hole to the 50. We also propose to sink a winze at the same time in the bottom of the 60, to be down a great part of the way, to give air against the 80 cross-cut reaches the lode."

PAR CONSOLS.—At a meeting of adventurers held at Fowey Consols Mine, on Tuesday last, the accounts were examined and passed, showing—Tin sold, 2668s. 16s. 7d.; copper ore ditto, 15,429s. 16s. 7d.; sundries, 18s. 15s. 11d.—18,117s. 9s. 1d. By cost for four months, to the end of June, 11,157s. 6s. 1d., leaving profit of 6960s. 3s., to which add balance last account, 4443s. 10s. 5d.—10,708s. 13s. 5d., from which deduct dividend declared at the meeting, of 50s. per share, 6400s., will leave a balance in hand of 4308s. 13s. 5d.

SOUTH WHEAL FRANCES.—At a meeting of adventurers, held on the 3d inst., the accounts were examined and passed, showing—Ore sold in May, 1439s. 19s. 1d.; ditto July, 1886s. 13s.; tin sold, 123s. 6s.—3449s. 18s. 11d.—By labour cost June, 725s. 15s.; ditto July, 577s. 10s. 5d.; merchants' bills, 533s. 6s.; lord's dues, 229s. 19s. 10d.; property tax, 72s. 18s. 4d.—leaving a profit of 1250s. 9s. 4d.—to which add balance last account, 648s. 14s. 9d.—1897s. 4s. 1d.—from which deduct dividend of 10s. per share, 1240s.—leaves balance in hand, 657s. 4s. 1d.

WEST CARADON.—At a meeting of adventurers, held at Liskeard, on the 30th August, the accounts were examined and passed, showing—Ores sold in June and July (less lord's dues, 323s. 11s. 9d.), 4903s. 8s. 11d.; materials sold and quay dues at Looe, 21s. 3s.—4924s. 12s. 7d.—By labour cost, May and June, 3490s. 3s. 1d.; merchants' bills, 991s. 11s. 3d.; sundries, 15s. 10s. 5d.; interest and commission, six months, 104s. 11s. 6d.; property tax, 30s. 2s. 10d.—leaving balance, being profit, 292s. 18s. 6d.; to which add balance last account, 1768s. 18s. 4d.—2061s. 11s. 10d.; from which deduct July dividend, 640s., leaves balance in hand, 1421s. 11s. 10d.; from which a dividend of 50s. per share was declared.

WHEAL MARY CONSOLS.—At a meeting of adventurers held at Liskeard, on the 31st August, the accounts were examined and passed, showing—Balance from last account, 74s. 10s. 6d.; labour cost, March and April, 945s. 17s. 4d.; merchants' bills, 232s. 7s. 4d.; sundries, 12s. 5s. 6d.; labour cost, May and June, 792s. 4s. 7d.; merchants' bills, 159s. 15s. 4d.; sundries, 4s. 6s. 1d.; interest, 55s. 0s. 4d.—2276s. 7s.—By tin and tin ores, sold May and June (less lord's dues, 38s. 18s. 3d.), 678s. 10s. 5d.; ditto July, and 150s. worth ready dressed (less lord's dues, 32s. 4s. 1d.), 665s. 5s. 2d.; leaving a balance, being loss, of 937s. 11s. 5d.—It was resolved, that the mines and materials be advertised for sale by private contract; and that Messrs. Allen, & Co., Gilpin, Eliott, Abbott, and the pursuer, be a committee to act for the adventurers; and, if unsuccessful in disposing of them, they are authorised to sell the materials by auction or private sale. If a company be formed to rework any part of the sett, a meeting to be called to authorise the sale of the mines.

MINING NOTABILLIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

HENKOW SILVER-LEAD.—The operations at this mine were resumed about six weeks since. On the 28th August every share was appropriated, and there is every reason to believe that most gratifying discoveries will almost immediately be made.

WHEAL ENMA.—The 40-inch engine has been started at nearly the eastern boundary of the Devon Great Consols sett.

MEETINGS DURING THE ENSUING WEEK.

MONDAY	Irish Waste Land Improvement Company—offices, at One.
TUESDAY	Gas-Light and Coke Company—offices, at Seven.
WEDNESDAY	Geographical Silver Mining Association—offices, at Two.
FRIDAY	Llanelli Railway and Dock Company—offices, at One.
	Mentor Life Assurance Company—offices, at half-past Two.

AN AMERICAN RAILWAY.—For want of a double track on the Camden and Amboy Railway, in the State of New Jersey, collisions are constantly occurring between passenger and merchandise trains. The road, from neglect, is in many parts so decayed, that the sleepers move with the motion of the trains, and the rails are split. A few months since, a train was precipitated through an open drawbridge, and the passengers only saved by the car hanging over the chasm. Delays take place frequently from the breaking down of engines. It is said that the managers meanwhile confine their attention to doubling the fares, and dividing 12 per cent.

NOVEL RAILWAY ROBBERIES.—A somewhat novel description of fraud has just been discovered. It consists in the removal of the legitimate tickets of direction from parcels of goods to be transferred by railway, and substituting other tickets, directed to a person who acts as a receiver in some other town than the one for which the goods were really intended.

ANOTHER COLLIERY STRIKE.—The misguided men at Castle Eden Colliery, Durham, have struck work; for what reason no one seems to know, as the wages are extremely good. R. Burdon, Esq., the proprietor, immediately obtained 30 policemen, to keep the malcontents in check, and got other men to screen the coal at grass, in order to load some vessels then waiting for cargo. It is expected they will soon return to their employment.

LEAD ORES

Sold at Aberystwith, September 3.

Mines.	Tons.	Price.	Purchasers.
East Logyias	60	£9 9 6	Newton, Keates, & Co.
ditto	60	9 8 6	ditto
Cwmystwith	50	9 5 6	ditto
Total tons		170.	

Sold at Bagillt.

Portmadoc	20	£7 5 0	Walker, Parker, & Co.
ditto	3	5 10 0	ditto
Arkansas	48	19 10 0	ditto
ditto	7½	20 5 0	Mather & Co.
Shalles	31	14 10 0	ditto
ditto	9	9 15 0	Walker, Parker, & Co.
ditto	2	9 15 0	ditto
Total tons		117½.	

Sold at the Mine.

East Wheal Rose	85	£12 13 6	T. Somers.
ditto	68	11 18 6	—
ditto	52	12 2 6	R. Nicholl & Son.
Total tons		200.	

Sold in London.

East Tamar	67	£5 5 6	Somers.
Cwm Erdd	20	11 6 0	Walker, Parker, & Co.
Total tons		87.	

Sold at Berratalton.

Herodsfoot	104	£11 7 6	Newton, Keates, & Co.
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BLACK TIN

Mines.	Tons.	Price per Ton.	Purchasers.
Charlestown	10½	£40 12 6	Daubuz; Calenick; Williams.
ditto	1	28 12 6	Calenick Smelting Co.
Mineral Court	16	5 48 0	J. H. Enthoven & Co.
ditto	2	7 17 0	ditto
ditto	11	2 18 48	ditto
ditto	0	1 28 17 0	ditto

COPPER ORES.

Sampled August 22, and Sold at White's Hotel, Pool, September 6, 1849.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
North Roskear	93	£6 7 6	North Pool.....	61	£2 17 0
ditto	88	4 18 6	Tincroft	78	3 10 0
ditto	87	4 6 6	ditto	77	2 19 6
ditto	80	4 15 0	ditto	74	2 17 6
ditto	79	6 7 6	ditto	67	4 11 6
ditto	76	5 10 6	ditto	61	4 19 0
ditto	75	4 4 0	ditto	50	5 12 0
ditto	68	6 9 6	ditto	41	4 2 6
ditto	65	2 6 0	ditto	23	8 3 6
ditto	59	4 13 0	Wh. Seton	34	4 14 0
ditto	54	6 7 6	ditto	32	4 5 0
ditto	40	2 4 0	ditto	30	3 0 6
ditto	34	1 3 0	ditto	79	4 9 0
Consolidated	112	5 8 6	ditto	71	5 8 6
ditto	111	6 9 6	ditto	57	4 18 6
ditto	99	7 2 6	Fowey Consols ..	95	6 12 6
ditto	88	7 6 6	ditto	72	5 16 0
ditto	81	5 11 0	ditto	51	5 1 0
ditto	70	5 15 0	South Wh. Consols	60	5 10 0
ditto	54	7 5 6	ditto	65	7 15 0
ditto	54	7 5 6	ditto	56	12 6 6
North Pool	113	5 14 6	South Wh. Bassett	66	3 14 6
ditto	110	5 14 6	ditto	55	13 12 0
ditto	107	2 15 6	ditto	54	13 12 0
ditto	97	5 10 6	South Roskear ..	104	4 6 0
ditto	62	2 13 6	Wh. Vvryan	26	5 10 6

TOTAL PRODUCE.

North Roskear	990	£4423 11 6	Fowey Consols ..	213	£1304 10 6
Consolidated	691	4229 16 0	South Wh. Frances	213	2077 3 0
North Pool	550	2432 5 6	South Wh. Bassett	175	1728

3801 tons | Quantity of Fine Co

Amount of Money £20,549 12 6
LAST SALE.—Average Standard £108 2 0.—Average Produce 0 1
Standard of corresponding sale last month, 98s. 14s.—Produce, 71.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal.....	244	£ 1282 14 6
Vivian and Sons.....	1036	4833 15 9
Freeman and Co.....	291	2233 4 4
Fuscoe Grenfell and Sons.....	290	1318 17 0
Cross, Copper Co.....	290	2 2 2
Sims, Williams, and Co.....	632	3905 15 4
Williams, Foster, and Co.....	927	5026 14 4
Schneider and Co.....	294	1641 4 0

..... 3801

Copper ores for sale on Thursday next at Andrew's Hotel, Redruth.—Mines and Parcells.—Carn Brea 904—Tywarmlayle 509—Fow Consols 257—Levant 217—West Wheel Treasury 198—Wheel Tremayne 185—Wheel Agar 130—West Wheel Buller 104—Charles-town United Mines 79—Creeg Braws 53—St. Aubyn and Grylls 14—Godolphin Consols 7—Wheel Pleasant 6—North Wheel Abraham 5—West Wheel Rodney 4—Wheel Neptune 2—Wheel Fortune 3—East Crimsin 1.—Total 2677 tons.

Copper ores for sale on Thursday week, at the Royal Hotel, Truro.—Mines and Parcells.—Devon Great Consols, Wheel Joseph, Wheel Maria, Wheel Fanny, and Wheel Anna Maria 1326—West Caradon 299—Fowey Consols 220—Wheat Friendship 217—Folldice 169—Bedford United Mines 134—Wheat Malden 42—Phoenix Mines 32—Wheel Jewel 28.—Total quantity of ore to be sold, 2467 tons.

COPPER ORES

Sampled August 15, and Sold at Swansea, Sept. 6, 1849.

Mines.	Tons.	Prod.	Price.	Mines.	Tons.	Prod.	Price*
Cobre	63	212	£16 2 6	Cobre	53	224	£16 16 6
ditto	56	214	16 2 0	ditto	38	204	15 7 6
ditto	52	24	17 11 6	Cuba	110	13	9 18 6
ditto	67	24	17 16 6	ditto	70	22	17 3 6
ditto	66	24	17 18 6	ditto	69	21	17 2 0
ditto	58	23	16 17 6	Berehaven	135	104	8 3 0
ditto	104	144	10 12 0	ditto	110	104	8 1 0

TOTAL PRODUCE.

Cobre	556	£8749 14 0	Cuba	249	£3473 18 0
Berehaven	245	£1985 15 0			

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	129	£2090 5 3
Gruncell and Sons	110	1091 15 0
Simms, Wiliyams, and Co.	139	2332 3 0
Vivian and Sons	239	2202 13 0
Williams, Foster, and Co.	201	2361 9 6
Schneider and Co.	110	1892 13 0
British and Foreign Copper Company	129	2188 8 3

Total tons	1150	£14,209 7 0
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Copper ores for sale Sept. 30.—Cobre 96, ditto 92, ditto 85, ditto 48, ditto 29, ditto 73, ditto 71, ditto 69, ditto 68, ditto 25.—Sanlago 81, ditto 75, ditto 58, ditto 57, ditto 56, ditto 28, ditto 8.—Cuba 82, ditto 85, ditto 8.—Ballymurrigh 50, ditto 49, ditto 43, ditto 34.—Berehaven 102.—Knockmahon 79.—Burra Burra 32.—Total, 1523 tons.

THAMES TUNNEL COMPANY

NOTICES TO CORRESPONDENTS.

* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

* A Shareholder (City).—The small town of Guadalupe, famous for its silver mines, is 19 leagues from Seville; the ports from the latter city are Brest, Cantillana, and Canilla. The country is rich and well cultivated, but barren between Canilla and Canilla. Beyond this town the Guadalupe is crossed.

* ASTURIAN MINING COMPANY.—A Correspondent at Paris states to us, that while reading, in the *Mining Journal*, the report of the meeting of the Asturian Mining Company, and the awkward predicament in which the shareholders are placed, he, by a strange coincidence, received a letter, dated August 26, from Pola de Lena, near Mieres. In this letter he was informed, that on the day previous there was a grand feast among the workpeople of the Asturian Mining Company, at Mieres: much liquor and wine were drunk, and great intoxication ensued; the people fired off guns, and it was openly and joyously asserted that they were going to have more money than ever to spend. Our correspondent asks, how is this fact to be estimated, considering the depressed, the ruinous state of the property—at least, as regards the English shareholders? He says he writes from a feeling of indignation, and a wish that the shareholders here should be acquainted with the scandal.

* Robert Williams (Tredgar Iron-Works).—There is but very limited demand for sulphate of barium in the present market, and it is adulterated white lead. There are some large deposits in several districts lying unworked, as the consumption of the article is so small.

* THE ATMOSPHERIC SYSTEM.—Mr. Weston may rest assured that the observations in Mr. Bagg's communication, in our last number, "heterogeneous mass of truth and error, practicality and absurdity," was by no means intended personally. The observation was, no doubt, written as advisedly and considerably as it was put in type; and we are satisfied no man of common scientific attainments, who has watched the emanations from the Enrollment Office for the past six years on atmospheric propulsion, but must subscribe to the truth of the remark. It would be useless to publish the whole contents of our correspondent's communication: we feel assured his invitation to a public discussion on the merits of the various plans would be unnoticed by the few parties now in the field for carrying out the atmospheric principle—one of which, we have no doubt, will soon be in operation on a sufficient length of line to convince the most sceptical of its practicability and advantages. Such invitation would meet a like fate as Mr. Weston's proposal for the several patents to amalgamate, join their interests, and carry out the most advantageous plan. Inventors who feel satisfied their systems are based on sound scientific, practical, and economic principles, cannot be expected to give up a share of these advantages for crude undigested theory.

* An Old Condenser.—On the Atmospheric Principle of Railway Traction, shall appear in next week's *Journal*.

* An Enquirer (Turin).—Johannite, or hydrous sulphate of uranium, mixed with sulphate of copper, occurs in extremely small crystals, in Joachimsthal, in Bohemia. It is a species as beautiful as it is rare, having only been found in one mine, and that in 1809. Its colour is deep grass green, translucent; lustre vitreous; streak pale ashen green; taste slightly bitter; fracture imperfectly conchoidal: partially soluble in water. Heated in the air, it yields much moisture, leaving a dark brownish mass; fused upon charcoal with soda, and then laid on a piece of silver and moistened, it blackens the metallic surface. In the reducing flame, with soda, a bead of copper is obtained. With borax, it forms a fine green glass, as well in the oxidizing as in the reducing flame; in the latter it becomes red and opaque on cooling, exhibiting the presence of oxide of copper. With salt of phosphorus only green colours are produced, that of the oxidizing flame having rather the appearance of copper, the reducing more of uranium. If, therefore, contains water, sulphuric acid, and the oxides of copper and uranium, but in what proportions has not been determined. It was named by the celebrated chemist, Haidinger, in compliment to his imperial highness the Archduke John of Austria, the present Vicar of the German empire.

* D. F. (Colchester).—Indigo combined with gypsum, and sometimes Prussian blue, is used to dye green teas.

* A. P. (Lime-Street).—A detailed description of the mines of Almaden, by Don Casiano de Prado, was published in Madrid, 1846; several notices of which have at different periods appeared in our columns.

* An Engineer (Greenwich).—The Rialto was built by Giovanni da Ponte, in 1591, over the Grand Canal, at Venice. The chord of its arch is 96 ft. 10 in.; its versed sine 20 ft. 7 in.; its voussoirs, at their vertex, 4 ft.; its height from the water 21 ft., and its width 66 ft.

* G. Harries (Penzance).—There are two mines of mercury at Zalathia, in Transylvania. The ore of the one is cinnabar, which is extracted from a vein in a matrix of quartz and calcareous spar, traversing a black argillaceous slate and sandstone. The ore of the other mine is granulated cinnabar, in a vein which runs in limestone. The produce of these mines is estimated to be about 6000 lbs. of pure quicksilver annually.

* George Hampson (Rugby).—The boundary line between the United States and Canada, run in accordance with the Ashburton treaty, cost the labour of 300 men during 18 months. For 300 miles a path was cut through the forest, 30 ft. wide, and cleared of all trees. At the end of every mile is a cast-iron pillar, painted white, 4 ft. out of the ground, 7 in. square at the bottom, and 4 in. at the top, with raised letters on its sides, naming the commissioners who run the line, and the date.

* L. Hirsch (Magdeburg).—The greater part of the zinc works are situated in the neighbourhood of Birmingham and Bristol. The manufacture of brass, which has long been one of the staple articles of these towns, was probably the cause of the introduction of this branch of industry, at the period when brass began to be made by the direct union of copper with metallic zinc, instead of calamine. A few zinc-furnaces exist also in the neighbourhood of Sheffield, amidst the coal pits surrounding that town. Bristol and Birmingham derive their chief supply of ores from the Mendip Hills and Wiltshire, and Sheffield from Alston Moor. The English furnaces for smelting zinc ores are sometimes quadrangular, sometimes round, the latter form being preferable. The mixture of reducing consists of one-fourth part of the desulphurized oxide, one-fourth of calcined calamine, and one-half part of charcoal, which commonly affords 30 per cent. of zinc.

* Exclusive license of M. Chameroy's patent for sheet-iron pipes, a description of which appeared in our *Journal* a few weeks since.

* Chemist (Bristol).—Bottger makes use of the following apparatus for gilding and plating. A wide cylinder has a hole in the middle of its base, through which there passes a copper wire, cemented in with sealing wax. The part of the wire within the cylinder is formed into a flat spiral, upon which is laid a piece of amalgamated zinc. The cylinder contains very dilute sulphuric acid; in this is immersed a cylinder, open at the top and bottom, heated over at the bottom with a thin bladder. The cylinder contains solution of gold, in which the metal to be gilt is immersed, after it has been first connected, by means of a platinum wire wound round it, with the copper wire proceeding from the zinc. The gold solution contains one part of chloride of gold, freed as much as possible from excess of acid, in 160 parts of water, or, still better, chloride of gold and sodium dissolved in water. Each immersion lasts for a minute at the utmost, and is followed by washing with water, and drying (accompanied by brisk rubbing with fine linen) and polishing with powdered chalk. Silver requires five or six, steel ten or twelve, immersions, lasting from half a minute to a minute. When the silver object is connected with the zinc by a copper wire, part of which dips into the solution of gold, the gilding acquires a strong reddish tint; whereas, when silver or platinum wires are used, it is of a full bright yellow. If the gold solution contains the smallest trace of copper, scarcely anything but copper is at first deposited upon the silver. Copper also does not show any appearance of gilding, for some time, because the red colour of the metal shines through. Brass may be gilt almost as well as silver; tin not so well. German silver gives a coppery kind of gilding, not very beautiful. Watch springs take a very beautiful gilding when they are freed by hydrochloric acid from the blue film of oxide. On long knives the gilding is not uniform, being thickest at the end next the steel. Steel, which is to be gilt, must be highly polished without oil; that which has been polished with oil does not take the gold, for it retains particles of oil closely attached to its surface, so that it is scarcely attached by strong hydrochloric acid.

* George Grimsey (Witham).—The mordants chiefly employed by dyers are the sulphate of alumine, or the acetate of alumine, made by the addition of alum to a solution of acetate of lead, when, by a double decomposition, sulphate of lead is formed and precipitated, and the acetate of alumine is also formed, and remains in solution—the nitro murexide, the acetate, and the tartrate of tin, the red acetate, and the red sulphate of iron.

* L. B. (Buckleybury).—The purity of gold is not estimated, either in Great Britain or other countries, by the weights commonly in use, but by an Abyssinian weight, called a "carat." The carats are subdivided into four parts, called grains, and these again into quarters, so that a carat grain, with respect to the common division of a pound troy, is equivalent to 24 dwts. Gold of the highest degree of fineness, or pure, is said to be 24 carats fine. When gold coins were first made at the English mint, the standard of the gold was 22 carats, 19 grains, and 21 dwts. The standard of the gold continued without any variation to the 18th Henry VIII., when a new standard of gold of 22 carats fine, and 2 carats alloy was introduced. The first of these was called the old standard; the second, the new standard, or crown gold, because crowns, or pieces of the value of 5s., were first coined of this new standard. Henry VIII. made his gold coins of both these standards under different denominations, and this practice was continued by his successors until the year 1663. From that period to the present, gold coins have been made of the new standard, and the old standard gold, although some of the coins made of the old standard, previously to 1663, continued to circulate till 1732, when they were forbidden to be longer current. The standard of the present gold coins is, therefore, 11 parts of fine gold and 1 alloy. The pound of troy of such gold is divided into 46 89-129 sovereigns, each of which ought, when fresh from the mint, to weigh one 46 89-129th part of 12 ozs., or 5 dwts. 3 171-623 grains of standard gold, or 4 dwts. 17 18-1214 grains of pure gold. Twelve ounces of the metal of which standard English silver coins are made, containing 11 ozs. 2 dwts. fine, and 18 dwts. alloy; and a pound troy of this standard silver, or pound sterling, contains 66s., or 20-56 parts of 11-12ths of a pound troy of fine silver, that is 1614 36-66 grains. From the 43d of Elizabeth down to 1816, when the Act 56th of George III., cap. 68, imposing a seigniorage of about 6 per cent. on the silver coin was passed, the pound weight of standard silver bullion was coined into 62 shillings. All the English silver coins have been coined out of silver of 11 ozs. 2 dwts. fine, from the conquest until the present period, excepting for a period of 16 years, from 34th Henry VIII., to the 2d Elizabeth. The carat is a bean, the fruit of an Abyssinian tree called "cara." The bean, from the time of its being gathered, varies very little in its weight, and seems to have been, in the earliest ages, a weight for gold in Africa.

* G. F. (Lullingstone).—Pyrites, or copperas stones, are collected in the Isle of Sheppey, in Kent, in great quantities. About the year 1579, an old chronicle states—"One Matthias Falconer, a Brabarter, did try, and drew very good brimstone and copperas out of certain stones, gathered in great plenty on the shore near unto Minster."

* An Inquirer.—The engraving and description of Concanen's Wind Machine was published in the *Mining Journal* of the 22d July, 1837.

* PRINCIPALITY OF WALES.—Erratum.—In the concluding part of this paper, in last week's *Journal*, the last year's produce of the Flintshire lead mines was erroneously stated 1056, instead of 10,056 tons of ore.

* The numerous disappointments in procuring back Numbers during the past year induces us to suggest, that subscribers should be careful in filing, or otherwise preserving, their papers; and where extra copies are required, that they should be applied for as early as possible.

* We should feel obliged to all purveyors, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the *Journal*.

* An Inventor (Leeds) had better consult Mr. F. W. Campin, of the patent office, 210, Strand, who will advise him as to the best course to pursue. Indeed, we may here state generally, that Mr. Campin will at all times be most ready to give all necessary information with respect to securing patents or registrations of designs. Mr. Campin will also forward to applicants an official circular of information, with scale of fees, &c.

* A Constant Reader (Broad-street).—Chloroform has, we believe, been used as a motive power in steam-engines in Paris. The vapour acts exactly like steam, and while it exerts power on one side of the piston, is condensed on the other. The alternate vaporisation and condensation can be continued with very little waste of the chloroform, and a much less quantity of fuel is necessary than in an ordinary engine.

* It is particularly requested that all communications may be addressed—

To the Editor,
Mining Journal Office,
26, FLEET-STREET, LONDON.

And Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL

London and Commercial Gazette.

LONDON, SEPTEMBER 8, 1849.

The *Mining Journal* is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

A return has just been made, by order of the House of Commons, on the motion of Sir JOHN GUEST, of the quantity of foreign iron imported into, and exported from, the United Kingdom in the year 1848, distinguishing the several sorts of iron, and the countries from which imported, and to which exported. British iron exported in the same period, including unwrought steel, with the countries to which the same were exported, and the quantity of British hardware exported in the year 1848, distinguishing the countries to which exported, and the declared value. The quantity of foreign iron imported was as follows—viz.:

Countries.	Iron in bars, unwrought.	Blooms.	Old broken and old cast-iron.	Iron & steel, wrought.
Russia.....Tons 4297	50	56	42 10 6	
Sweden.....10322	162	61	12 10 0	
Norway.....148	259	3	37 9 1	
Hanseatic Towns.....			102 13 6	
Holland.....			653 5 3	
France.....1			16789 8 10	
Belgium.....			682 10 6	
China.....			517 15 3	
Sundry places.....101		127	1226 19 7	
Total.....Tons 23,509	464	287	228,991 0 8	

In addition to which, there were 1340 tons chromate of iron from America and Norway, 283 tons of pig, 91 tons of cast-iron, 348 tons of unwrought steel, and 340 tons of wrought iron and steel from various countries. The foreign bar-iron was exported to—United States, 1747 tons; East Indies, 579 tons; Egypt, 206 tons; Greece, 184 tons; Gibraltar, 172 tons; Chili, 116 tons, and various countries—making the total exported, 3432 tons. The quantity of unwrought steel exported was 340 tons, and the amount of wrought iron and steel entered by value was to—East Indies, 6689*l.*; United States, 1090*l.*; Holland, 780*l.*; Australia, 372*l.*; China, 354*l.*; Gibraltar, 338*l.*; Mecklenburg, 307*l.*; Mexico, 260*l.*; Turkey, 200*l.*, and various other places—making a total of 11,560*l.* The quantity of foreign iron retained for home consumption was 17,331*l.*, and the duty received thereon, 1743*l.* 16s. 6d.

British iron exported was as follows—

Countries.	Pig.	Bar.	Bolt & Rod.	Cast.	Wrought.	Unwr. Steel.
Russia.....Tons 2844	3615	37	3536	2540	409	
Norway.....184	1269	63	121	207	553	14
Denmark.....7850	1493	618	34	1357	33	
Iceland.....12928				3		
Prussia.....102	4978	264	4	505	61	
Oldenburg.....2094	142			43		
Hans Towns.....6181	20960	1930	1483	5404	538	
Holland.....22901	6086	298	294	5663	321	
France.....7695	707	212	14	1829	54	
Portugal, Azores, &c.....629	3449	270	51	2476	2	
Spain and Canaries.....2158	1794	8	274	2675	17	
Italy.....5200	31794	2613	4198	5180	114	
Turkey.....881	7949	3951	105	581		
East Indies.....850	13545	1664	443	5809	60	
China.....15	194	132	15	194	1	
Australia.....1019	3416	54	571	2614	58	
Canada.....4248	9277	80	2593	6956	129	
West Indies.....140	5638	13	1948	4101	13	
United States.....91704	152057	264	1296	15031	4007	
Brazil.....2321	2380	16	783	2494	36	
Chili.....184	3481	30	119	716	1	
Peru.....35	1231	137	397	276	13	
Malta.....	1040	138	307	276	13	
Greece.....	1288	371	1	581	1	
Egypt.....	1613	53	104	349	1	
Africa.....	1107		180	792		
Cape of Good Hope.....	1133	11	218	1481		
Sundry places.....1851	6135	977	566	5471	518	
Total.....Tons 175,550	33,135	17,554	19,371	76,365	61,913	

There was also exported 1913 tons of iron wire—of which 424 tons went to the Hans Towns, 350 tons to the United States, 239 tons to Belgium, 214 to Russia, 153 to Spain and the Canaries, 105 to Holland, and the remainder to sundry places. Of old iron for manufacture, there were exported 7241 tons—of which 5890 tons went to the United States, 604 to Italy, 522 to Prussia, and the remainder to sundry places.

Of British Hardware and Cutlery, the exports amounted to 18,105 tons, of the value of 1,860,150*l.*, the principal countries being America, 7108 tons, value 777,964*l.*; Canada, 1048 tons, value 95,966*l.*; East Indies, 824 tons, value 92,435*l.*; Hans Towns, 640 tons, value 82,030*l.*; Australia, 781 tons, value 79,103*l.*; Brazil, 1144 tons, value 73,473*l.*; Russia, 487 tons, value 61,664*l.*; France, 361 tons, value 51,584*l.*; foreign West Indies, 724 tons, value 48,590*l.*; Holland, 303 tons, value 40,291*l.*, &c.

British Machinery and Millwork exported amounted to 817,656*l.*, Russia taking 212,712*l.*; Spain and Canaries, 98,143*l.*; Italy, 83,561*l.*; Hans Towns, 58,128*l.*; France, 35,198*l.*; Brazil, 29,201*l.*; Holland, 27,611*l.*; East Indies, 26,997*l.*; Turkey, 26,124*l.*; Mexico, 25,807*l.*; Java, 21,285*l.*; Egypt, 20,143*l.*; and the remainder to sundry other places.

Something like authentic information from California may now be considered to have been received, the *Times* having, on Wednesday last, published a communication from its "own correspondent," written in the streets of San Francisco, and which details contain a description of the character and habits of the people, the prospects of the emigrants, prices of provisions, necessities, &c. The only novelty about this document, however, is, that it singularly confirms all previous reports, and proving with how little adulteration or exaggeration original accounts have travelled from the far west. The outrageous charges for rents; the hotel realizing a rent of 15,000*l.* a year; 150*l.* per month being paid for a small room for a counting-house; the enormous price of some provisions, and the moderate cost of others; the losses likely to be sustained by most shippers, from a complete glut of many descriptions of goods; and the state of things at the diggings, all as given in straggling intelligence across a wide desert continent and the Atlantic, are singularly confirmed by this document. The proportion of people of peculiar countries is interesting. Out of a fleet of 103 sail, lying in the harbour, 39 were Americans, 22 Chilians, and 9 British, the remaining 33 being from various nations—including the opinion that a considerable majority of the populace are of the Anglo-Saxon race; while it is probable one-fifth of the whole are Chilian and Peruvian, roused by a national hankering after gold dust and the placer, from that listlessness which, under general circumstances, mark their character.

Just, also, as we depicted months since, this correspondent confirms the fact, that there is absolutely no Government, no legal administration of justice, even in San Francisco; and yet from it we learn that merchandise of all sorts, furniture, liquors, and provisions are fully exposed night and day, on the quays and in the streets, for want of warehouse room, and yet no robbery takes place, except in solitary instances. At the diggings a sort of code of honour is understood, by which the utmost harmony prevails; and although generally composed of hardy, bold, and reckless adventurers, one man does not encroach on his neighbour's washing ground, though it may be richer than his own. Robbery is almost unknown, and

having buried his gold in his tent, he leaves his clothes, provisions and goods, with no other safeguard than this good faith among his fellows.

There is, however, doubtless an understood summary proceeding of Lynch law at bottom, which persuades all that it is more prudent, safe, and economical in the end, to wash for themselves, where there is plenty for those who will work, than to encroach upon the property of others. Our general remarks on the difficulties attending the gold-seeker are more fully confirmed; it is only those who have been used to laborious occupation in all weathers who will stand any chance of realising riches in California. The hardy "navvie," the Irish labourer, and such robust constitutions, may struggle through months of toil; but to the arisan, or mechanic, who has been used to a sedentary life in doors, gold-seeking offers but a poor recompense. In our last intelligence from California, in another column, we have given some extracts from a letter by a substantial gold-seeker, which are interesting, as showing the exact nature of the difficulties to be encountered, and which letter bears the stamp of authenticity.

THE BLOWPIPE—IMPORTANCE OF SCHOOLS OF CHEMISTRY.

The rapid strides which the science of chemistry has taken within the last half century, and the still improved facilities for its study which have started up within even the last dozen years, is showing a marked effect, not only upon our manufactures, but even in the conversation and turn of mind remarkable in the rising generation, and the middle classes of society. From the artisan to the peer all are aware, in some degree, of the beautifully minute, yet important, changes which are constantly taking place in all organic matter; of the fact that by the aid of this sublime physical study the most delicate of these operations of Nature are laid open to our view, and that by the knowledge thus acquired the most magnificent improvements in the arts and manufactures have been perfected. Even the peasant at the plough is now aware that in turning up the sod he is preparing a great chemical apparatus, by which the seed he sows shall be enabled to fructify and produce fruit in the greatest abundance, in proportion as he supplies the soil with the necessary aliment peculiar to the nature of the plant. Mechanics' institutes, scientific institutions, and an abundance of cheap literature, have done much to advance this desirable knowledge, but as more particularly appertaining to the higher walks of chemistry alone there can be no doubt that the Royal College of Chemistry, London, presided over by Prof. Hofmann, and the Liverpool College of Chemistry, founded and conducted by Dr. Sheridan Muspratt, has been, and now are, assisting the advance of the science more in months, than was in the early part of the present century accomplished in years.

Dr. Muspratt was the translator, in 1844, of Plattner's profound work on the blow-pipe, which had obtained such high reputation on the continent; and the opinion that it would be highly acceptable in an English dress, was soon found a correct one, from its having become a standard work of reference in every laboratory in the kingdom, as it had been previously in the German language in Europe. We have now before us a second edition, appropriately dedicated to Liebig, of whom the editor was a pupil. In his preface to this edition, Dr. Muspratt informs us that he daily witnesses the truthfulness of the results of blow-pipe operations by his students, who, before dissolving a substance for analysis in the humid way, ascertain its comportment before the blow-pipe. This operation enables the mere beginner to discover the presence of cobalt, antimony, arsenic, lead, silver, bismuth, manganese, selenium, sulphur, zinc, chromium, copper, mercury, strontia, magnesia, and soda. A skillful operator can prove infallibly the presence of a still greater number of substances; and the editor states, that at Freyburg, he saw Professor Plattner working with the blow-pipe, and the beauty and accuracy of his manipulation was astonishing. We know that, among the Cornish assayers, and others connected with mineral analysis, much doubt exist as to the correctness of blow-pipe experiments, particularly on ores of low produce; it being by some asserted that, from the minute portion manipulated upon, and the mere fractional portion of metal produced, it is impossible that a correct comparison can be made, as to the produce of, perhaps, 100 tons in the smelting furnace; and persons entertaining such views prefer the tedious essay by the crucible. We apprehend, however, that this arises more from insufficient practice with the blow-pipe, than from any imperfection in that delicate instrument itself, which, in the hands of such manipulators as Plattner, Liebig, and Muspratt, enables them to detect substances in a body under examination, which might often be overlooked by either of the other known processes.

To those who would study the practical use of the blow-pipe, we cannot do better than recommend this important work, in which every chapter of the first edition has evidently undergone the most considerate revision, all new minerals noticed, and every improvement likely to be of use to the student or philosopher has been introduced, either in notes or incorporated in the volume. There is a preface to this edition by Liebig, in which he says—"Dr. Sheridan Muspratt's translation of Plattner's excellent treatise on the *Use and Application of the Blowpipe*, has been executed with fidelity and ability; and I consider its publication in England will be of essential service. This instrument is of the highest advantage to the chemist, geologist, and mineralogist, as a means of ascertaining with the greatest accuracy, in a few minutes, all the constituents of a mineral." To return to the Liverpool College of Chemistry; it is highly gratifying to be able to state that, although established scarcely a year, it has been productive of the most satisfactory results. Numerous young men are availing themselves of its advantages; and, in May last, quite a sensation was caused in the lecture-room of the Chemical Society of London, on the reading of two papers by pupils of the Liverpool College—one "On the sulphates of potassa, chromium, lithia, and bismuth," by Mr. J. Danson; the other, "On a Singular Substance resulting from Cloves," by Dr. Robert Scott. The advantages from such an institution cannot well be over-estimated; and while we have had a Davy in Cornwall, and a Dalton in Manchester, it is probable an equally bright hall will, at a future period, encircle the name of Muspratt, of Liverpool.

SHREWSBURY AND BIRMINGHAM RAILWAY.

It will be in the recollection of our readers, that some time since Mr. Geach, of Birmingham, made a charge against Messrs. Thornycroft and Perks, of Wolverhampton, and Mr. Knox, the secretary, with co-operation, that they, as members of the carriage committee of the directors, with a view to their own gain, had induced the other members of the committee to fix on a description of iron for axles and tires, involving an outlay on the part of the company amounting to 689*l.* 11s. 8d. on the contract entered into, beyond what wheels and axles equally efficient might have been supplied for. Upon this grave charge, the directors immediately appointed a committee of inquiry, who thoroughly sifted and investigated the matter, and so completely unfounded have they found the charge, that they thus express themselves in the report—"The charges against the secretary of co-operation with Messrs. Thornycroft and Perks, and the other charges by Mr. Geach, of unfair influence against competitors, were so satisfactorily refuted, that your committee consider it unnecessary to burthen their report with any matters except those pertaining to the main charge against Messrs. Thornycroft and Perks, which has been already stated." It appears by the report, that in every case the axles and tires were to be made of a superior iron, the higher market value of which exactly made up the difference in the amount complained of by Mr. Geach, who, it appears, is by no means a disinterested accuser, having an eye to business himself. It seems he wrote to the committee, offering wheels and axles at 5*l.* per set less than the contract, thus saving 1250*l.*; but, when questioned, he admitted that the tires of the wheels would be not of best charcoal, but of Parkgate iron, which iron has been condemned by the railway commissioners. The half-yearly meeting of shareholders was held last week, when Mr. Thornycroft retired from the direction, to give the shareholders an opportunity to express an opinion, when, on his nomination, he was unanimously re-elected. Mr. Geach appearing determined to charge somebody with malpractices, moved for a committee, "to inquire into all matters connected with the past and present management of the company." This the directors directly opposed, as being no more or less than a vote of want of confidence, and eventually the following motion of Mr. Slaney was carried—"That a committee of proprietors be appointed to consider the points stated by Mr. Geach as to the contracts, and also the questions relating to the inaccuracy of the dividend warrants." This charge of Mr. Geach is, that Mr. Knox (the secretary) kept back the notices for tenders for working the line by contract, in order to favour certain parties, which charge has been disposed of by a committee of directors, as stated above.

* The Use of the Blowpipe, in the Qualitative and Quantitative Examination of Minerals, Ores, Fossils, and other Metallic Compounds. By Professor Plattner, assayer master at the Royal Freiberg Smelting-Works. Edited, with amendments, by Dr. Sheridan Muspratt, professor of the Liverpool College of Chemistry, author of *Outline of Qualitative Analysis*, for the Guidance of Students of Chemistry, &c. With a preface by Baron Liebig. Illustrated by numerous diagrams. Second edition, revised and enlarged. London: Taylor, Walton, and Maberly; Upper Gower-street.

ANTHRACITE IRON MANUFACTURE OF AMERICA.

In the last Number of the *Journal of the Franklin Institute of the State of Pennsylvania*, there is a paper, by Mr. H. Fairbairn, on the improvement in the manufacture of iron by anthracite, containing some interesting statistics, showing the rapid strides which the iron trade has made in this country in spite of many natural disadvantages, as relates to the quality of the ironstone, and that our trans-Atlantic neighbours have not, in the manufacture of iron, pursued that go-a-head system, which characterises most of their pursuits. In the course of his remarks, he observes that, by the discovery of working iron furnaces by the hot-blast, so simple in principle, but so powerful in its consequences, Scotland has become the country in which one-fourth of all the iron consumed by all nations was manufactured in 1848. From the comparatively small quantity in 1836 of 44,000 tons, her manufacture in 1848, a short period of 12 years, was 650,000 tons; the invention of Mr. Neilson having overcome the inferior quality of the coals of the Clyde district, and making known that Lanarkshire, famous but a few years since only for its Bob Roy, is now best known in the ledgers of the merchants of Boston and New York, and sending out iron, to be sold almost at the doors of the iron manufacturers of the United States. This instance of a conquest of difficulties, the writer states, ought to animate the American iron manufacturer, as Nature has done far more for the United States than Scotland; while science appears to have been at a standstill, they being undersold by the pig-iron of Scotland, and the bar-iron of South Wales; and yet Wales is an inferior country, possessing only a stubborn silicious carbonate of iron, and making bar-iron deficient in malleability, unless with the addition of hematites from the extreme north of England, at a cost fatal to profit. So deficient is South Wales in this respect, that hematite ores have been largely imported even from Pennsylvania. The only advantage in South Wales, or Scotland, is in the economical management of the fuel required in the iron manufacture, by which iron, though inferior in its quality, can be sold at considerably lower terms than the iron produced from the rich hematites of the United States. Notwithstanding the rich and inexhaustible deposits of argillaceous iron ores in the mountains of Pennsylvania, quite equal to those of Dannemora, in Sweden, for the manufacture of steel, and at a convenient distance from the coal mines, the high prices of fuel have been the principal cause of the inability of the American ironmaster to compete with those of Scotland and Wales. He then proceeds to show that, from the stubborn nature of anthracite, notwithstanding there is a comparative advantage of \$3 per ton in the expenses of iron ore as compared with Scotland, or Wales, there is a disadvantage of \$7 per ton in the fuel—that the anthracite iron of Wales, even when made with the patent hot-blast process of the late Mr. Crane, has never been profitable, and that of 23 blast-furnaces in operation in 1847, none could be made to produce more than 50 tons of pig-iron per week, with the same cost as 90 tons can be produced by the bituminous coal-works.

He then states, that the combustion of anthracite coal may be effected in the blast furnace by still simpler means than even the hot-blast, by the alteration only of the manner of filling the furnaces with anthracite coal. The existing mode of filling the furnaces in America is exceedingly rude and primitive, and tons of anthracite are thrown in, with a confusion which wastes the power of the engine, in forcing the air through solid masses of materials, which ought to be more regularly given to the action of the blast. The old mode is still adopted, of filling in 6 cwt. of ironstone and 6 cwt. of coal with limestone in quantities excessive beyond all knowledge of any practice in making iron in any other part of the world. The coal is in its original form, unbroken, and as it comes from the mines; the largest lumps are preferred by the makers, on the erroneous supposition that the longer it stands the blast the more heat it must give out; whereas it is clear that, in all smelting, the object is to bring out the heat in the shortest time; and in proportion as the combustion is rapid, the greater quantity of metal will be made.

It is, therefore, proposed to reverse this practice of filling furnaces with anthracite in its largest form, and to fill in the fuel, broken into pieces of the size of an egg to that of a nut, so that it is not so fine as to be rejected by the blast. Two tons of anthracite are required to make the same quantity of iron as half a ton of charcoal; this is owing to the former being four times the weight of the latter, as in that point of view their heating powers are the same. The burning of anthracite in this reduced form, allows of its combustion being equally rapid and complete as charcoal, as the atoms are thus exposed to the full action of the blast. It is then suggested that the most complete mode of filling an iron furnace, would be by inserting all the materials down hoppers, or shutes, for the purpose of producing the most complete intermingling of the coals, iron ores, and limestone, and the most rapid and complete giving out of the heat from the coal to the other materials; and by such a mode the utmost economy of materials would be effected, the most complete combustion would be insured, the escape of the carbonic acid gas would be facilitated, the utmost uniformity would be procured in the working of the furnace, and the greater part of the labour would be saved by the machinery, which would perform it more economical and more complete. With respect to the immense quantities of limestone used in the American furnaces, the writer is of opinion that the Pennsylvania, being almost pure, one-quarter of the quantity now thrown in would have every beneficial effect in the make of iron; and in this item alone \$3 might be saved in a ton of pig-iron. The writer concludes his paper with a comparison of the overwhelming wealth of England with the excessive poverty of Ireland, which he attributes to the coal and iron of the former, and their absence in the latter—at least, hitherto for any extended profitable results; but still hopes that, as one invention has produced consequences so extensive and so rapid to Scotland, the iron ores of Ireland may still, by the fostering hand of science, be brought into profitable use, and for the employment and comfort of the population.

AMERICAN STEEL.—The United States has always been dependent on other countries, mainly on England, for its supplies of cast steel, and the better qualities of sheer steel, and as the consumption of these articles in this country is immense, and is rapidly increasing, the importance of producing them within ourselves is apparent. Many attempts have been made to that end, but all have proven abortive, mainly, it is believed, for want of an American iron possessing the peculiar qualities for that purpose. The Adriatic Iron and Steel Manufacturing Company has now succeeded in producing these important articles, from American iron, of qualities of peculiar excellence—superior, it is believed, to that imported. The steel works of the company are located at Jersey City, N.J., and are under the superintendence of Mr. Joseph Dixon, well known in this country for his science and inventive genius. They are now in successful operation on a moderate scale, and by extending them, and at the same time enlarging the works at which the iron is made, the production might be so extended as to meet the entire wants of the country, and supersede imports altogether. The iron works of the company are situated among the Adriatic mountains, on the western borders of Essex county, N.Y., where the ore from which the iron is made (the magnetic oxide), is found in immense quantities, and where extensive and densely wooded forests surround them on every side, affording a supply of wood for charcoal, for reducing the ore, for a long series of years. The superior qualities of this over the imported ore are owing, it is believed, to the fact that it is made entirely from an iron which is admirably adapted for the purpose, without any mixtures of others which are not so adapted, and which can be obtained for about one-third of the price of genuine steel iron.—W. R.: *Journal of the Franklin Institute.*

BRITISH GOLD.—Under this title we are not about to describe the really precious metal of this country, or the products of a home California; but simply an ingenious and interesting discovery in the manipulation of metalliferous substances, by which an alloy is produced that is likely to come into very general use for numerous articles hitherto manufactured in gilt work, ornamental, and other more expensive metals. It is a mixture in certain proportions of copper, tin, zinc, &c., perfectly homogeneous, close in texture, highly ductile, rolls into sheets, and is manufactured with the greatest facility. It can be had of various tints, to represent gold of different degrees of colour and purity, takes a high degree of polish, and cleans easily when tarnished. We have inspected some small articles, pencil cases, &c., manufactured from this alloy, and it would indeed be difficult for the most practised eye to discover they were not gold, without having recourse to the acid test, or ascertaining the specific gravity, which is, of course, less than the precious metal. The patentee is Mr. M. Stirling, whose advertisement for his patent-toughened cast-iron appears in another column.

ELECTRIC TELEGRAPHS IN INDIA.—We understand that Mr. Whishaw, who has lately examined the system of telegraphs adopted in Prussia, to the extent of 1200 English miles, under the direction of the telegraphic commission appointed four years ago, is much gratified with the results of his investigation, as they fully corroborate all that he has submitted in favour of a simple, effective, and economical plan of telegraphs arranged by him for the vast territories of British India, a plan which is now under the full consideration of the authorities connected with the East India Company.

Original Correspondence.

COPPER SHEATHING.—No. XII.

SIR,—Whilst waiting "Germanicus's" convenience for the requested information, we may proceed with our inquiries, addressed, with his permission, to "T. H. S." though open, of course, to answers or comments from any other persons acquainted with the subject, as practised on the working scale. Taking, as our starting point, the date of Mr. Vivian's paper, 1823, and the summary of his process at that time, as given in yours of the 11th August, we have to collect what changes have been made since and before that time—how far likely to have affected the quality of the copper—and how they may be improved, or made to correct each other, so as to restore, or amend, the quality, and economise the process, whilst rather increasing than diminishing the products, by adapting the various qualities to the purposes they best suit, particularly sheathing. After the preliminary mixture of ores, Mr. Vivian enumerates the following series of operations:—

1. The copper ore calcined.
2. Calcined ore, melted.
3. Fine metal, from process 4, calcined.
4. Coarse metal, from process 2, calcined.
5. Calcined fine metal, melted.
6. Copper from process 6, roasted.
7. Coarse or blistered copper, refined.
8. Coarse metal, melted.

These we are to take in their order, beginning with the preliminary:—**MIXTURE OF ORES.**—These are described as consisting generally of sulphur, copper, iron, and 60 to 70 per cent. of earthy matter, with accidental proportions of tin and arsenic, and their average produce in copper, $\frac{1}{2}$ per cent., or 1-12th; and they are said to be deposited in the yards, one cargo upon another, so that, when cut down perpendicularly, to be carried to the furnaces, a tolerably general mixture is formed of the ores of the country. A mixture formed on the analysis of each ore is said to be preferable, but impracticable, from the impossibility of keeping the different ores separate.

So far as this impossibility is recognised in practice, can we wonder at the quality of the copper being continually varying with the varying ores from new mines, or even new levels, and still more from widely distant geographical and geological positions—all subjected to the same process, which regards them as essentially consisting of copper, iron, and sulphur, with occasional arsenic and tin, overlooking zinc, lead, antimony, nickel, and other metals, frequently still remaining in copper after passing the refinery? To this preliminary mixture of ores, our inquiries in the present letter shall be limited.

1. Was it not usual, when ores contained large proportions of oxide, or salts of copper, to correct them by an increased admixture of yellow, or even munday ore?—and to what extent is this now done with such of the foreign ores as consist in great part of such salt and oxide; or what changes have taken place in this respect since 1823?

2. Has any correction of this kind been practised upon zincy ores, either in modification of their metallic ingredients, or in weakening the per centage, so as to expose more surface to the air in calcination?

3. Such ores as are said, indefinitely, to produce "bad" copper; has it been practised, or even tried on the working scale, to mix them so as to correct each other by mutual re-action of their different hurtful ingredients (as for instance lead and antimony)?—and, if so, where can we hear of successful cases, past or present?

4. Does not the smelter regard the character of the ore, as well as its per centage of copper, in his purchases at the ticketing?—and is he not more or less guided in these purchases by the characters of those he has to mix them with?—and how far has the dressing of Cornish ores been thus influenced by the large importations of foreign?

5. The average produce is given by Mr. Vivian at $\frac{1}{2}$ per cent.; it has, however, been as high as 10, and as low as $\frac{1}{2}$, in some yearly averages, since that time. What may be regarded as the maximum per centage, beyond which a single process, or course of operations, is seldom or never allowed to rise?—and what the minimum, below which the smelter will not work?—and what especial injury is done to the quality by working at too high a per centage?

6. Generally, what changes have taken place in these respects at different times, or in different works, since 1823?

But sheathing copper is reported to have been, for the first five or six years, very uniform in texture and appearance, until a nominal improvement, about 1786; after which this uniformity ceased, and the sheathing was found to be inferior and uncertain, the waste rapidly increasing. After this, a few years before 1800, the complaints again increased widely; and so on, before our epoch of 1823, as well as since to the present day.

Looking back, then, from 1823. Has "T. H. S." or any other of your correspondents, the means of knowing—

1. Whether the character, dressing, or mixing, before 1786, differed considerably from that in 1823; or from Mr. Vivian's description of them quoted above?

2. Whether the "improvement" in 1786 was connected with the quality, sorting, or mixing, of the ores; or only in the process, of which we shall enquire in a subsequent letter?

3. Whether any changes in the produce and management of ores took place shortly before 1800?

And 4. Generally, whatever remarkable changes are known to have taken place, in the quality and management of the ores, from the earliest period?—J. PRIDEAUX: *Plymouth, Sept. 5.*

COPPER SHEATHING.

SIR,—In discussing this question, it would be far preferable that every one who takes part would keep their temper, and be as dispassionate on the subject as possible. I believe, as far as I have watched the correspondence, that it is Mr. Prideaux's object to ascertain the best mixture of ores and processes, so as to ensure a quality of copper sheathing that will wear twenty years. If so, I think the least that Mr. Prideaux could do would be to point out to the smelters the advantages they would derive from having copper of that quality. They would then unanimously join him in the discussion. If Mr. Prideaux be a shipowner, he would most decidedly prefer copper of the above quality; but if a smelter, he might take a different view of the matter.

I must confess that I have been a little uncourteous in not explaining to "Germanicus" (who professes to be a practical smelter of so long standing) the meaning of "surplus copper." I agree with him, that some improved method of smelting should be established; but I do not believe, "as the report says," that those who have adopted them have met with all the success they desired: I am far from believing that—although my ignorance in those matters may not be a criterion for other parties.

Swansea, Sept. 4.

A ROASTER MAN.

IMPROVED MANAGEMENT OF IRON-WORKS.

SIR,—In the present state of the iron trade anything tending to facilitate, or economise time, labour, materials, or scientific operations, without lowering the price of any kind of labour or skill, has, I should imagine, a strong claim upon the serious attention of those who may be immediately interested in the success of so important a manufacture as the one alluded to. Under this impression, therefore, I venture to send you the following description of a "new and improved system of managing extensive iron-works;" in the hope it may, if favoured with a place in your scientific, impartial, and well-conducted Journal, lend to beneficial and satisfactory results. I am not so sanguine as to imagine that ironmasters generally will adopt the recommendations in question—indeed, it would be almost impossible to carry them out at many works, owing to a variety of local circumstances; but those parties who may have the courage to do so, will place themselves in positions to bid defiance to any competition, in regard to either quantity, quality, or cost, of their several finished results, if not to command the whole iron-trade of the world!

With respect to "joint-stock" iron companies, there is exceedingly small chance of their escaping ruin, if the trade continues in its present depressed state much longer, unless the system of management about to be described be spiritedly and fully carried out by the owners of them. I beg to be clearly understood, that I by no means imply by these remarks that joint-stock iron-works are under the management of incompetent or improper individuals—very far from it; because I know there are many very clever men entrusted with the management of such undertakings; but this I may venture to say, without fear of contradiction from any quarter, that neither joint-stock, or any other iron-works, have the powers of success been applied to the tenth part the extent they might have been (particularly in the blast-furnace departments), for the benefit of, not only the ironmasters, but the operatives employed and the country at large; for, at some works, the loss of yield in blast-furnaces has amounted to 25 per cent. on the make of iron! A description of the proposed "new system" of

working will occupy about four or five columns of the Journal; and I will, if possible, send you a column of matter weekly, until the description be completed.—S. B. ROGERS: *Nantyglo, August 29.*

OUTLINE OF A NEW SYSTEM OF MANAGEMENT, FOR CONDUCTING LARGE IRON-WORKS SCIENTIFICALLY AND ECONOMICALLY.

The following may be enumerated as a few of the advantages that may be realised by the proprietors of iron-works, fairly carrying out the proposed new system of managing and controlling their several smelting and manufacturing establishments, provided there be nothing radically injurious in their raw materials, or in the terms or conditions under which they may have engaged to carry on their several metallurgical operations—viz.:

1. The real cost of all raw materials, and unfinished or finished results, may be accurately ascertained at any stage of the various operations of manufacture, and which cost may be regulated, in a manner, at pleasure, and at all times reduced to a fair and reasonable minimum, without, however, starving the "labourers in the vineyard" on the one hand, or injuring the property of the ironmaster on the other, by what may be termed *neck-or-nothing work*.

2. The quality and the working value of the various raw materials, or unfinished results, and of all residuums or offal, would be clearly made known; whereby all unnecessary waste or loss of yield in the several processes may be effectually prevented, and the ironmaster be insured the very best results, in yield, quality, and cost, his raw materials can produce. This is a point particularly interesting to the holders of property containing iron-making materials, especially what is termed "stone-coal property" (i.e. anthracite); and it is equally so to the proprietors of extensive *peat beds*, whether in England, Ireland, Scotland, or Wales: the reasons need not be mentioned.

3. All wear and tear of tools and apparatus, and the consumption of all necessary materials and labour, for duly keeping on the works, would be reduced to the least possible amount; and the loss, by *theft*, of many articles from the proprietors of the renovated or reformed establishments in question would be entirely prevented—for instance, the present extensive pilferings of oil, hemp, candles, coal, paint, tallow, timber, iron, brasses, buckets, baskets, shovels, and innumerable other useful or convertible materials.

4. Every individual employed about the works would be paid "according as his work may be," and in no other manner—thus ensuring to every honest and industrious man "a fair day's wages for a fair day's work," and at the same time putting an end to all fraudulent, roguish, or wanton misappropriations of property, or neglect of duties, whether of agents, artisans, or common labourers. On this point the fate of iron-works, and particularly joint-stock ones, very frequently depends.

5. The proprietors of iron-works, or their general or local manager, would always have a *veto* as to the employment of every person to be engaged upon their several premises; and they would also, by means of their "inspectors" (parties appointed exclusively by the ironmasters, or their local manager), be at all times put in possession of the exact state and condition of all stocks, works, and proceedings, mining and manufacturing.

6. All strikes of workmen would be entirely prevented, by every person being equitably graduated, and fairly promoted in their several employments, and well paid for their labour and skill; and, consequently, the stopping of works on account of wages, or disputes with operatives, would be finally put an end to, thereby preventing much misery amongst workmen and their families, much anxiety, loss, and disappointment to masters, and many serious evils of a commercial nature, nationally, locally, and individually.

[To be continued in next week's *Mining Journal*.]

MINING IN IRELAND.

SIR,—It is very strange, but no less true, that there is still a vast amount of prejudice and disinclination on the part of Englishmen embarking their capital in Ireland, and I am completely puzzled to ascertain the cause. It is very true, in former years, that this country was distracted by political agitators, and the people led to expect the performance of *political miracles*; but the bubble has burst. The country is in a state of profound tranquillity, and lacks only capital to make it one of the most prosperous and happy in her Majesty's vast dominions. What then can be, or is, the cause of this disinclination and prejudice existing to the minds of Englishmen that prevents their embarking capital in the development of Ireland's resources? For whether we look at her agriculture, mines, manufactures, or fisheries—a vast and ample field for the safe and profitable investment of capital—there is some cause or other at work which makes the English capitalist look with suspicion on everything Irish. Why is this? Has John Bull been deceived by Paddy in mining speculations?—if so, it is his own fault. He should first come and see for himself; before he invests his money. Or, if Englishmen invest capital in mines or fisheries are they afraid that their property and their lives would not be safe? Let them come and see for themselves; and all the prejudices of generations would dissolve like "the baseless fabric of a vision." Are they afraid that life or limb would be injured? Let them come and spy out the land; and they will find more gratitude on the part of the labouring population for the means of earning 6d. a day, than in any other part of the United Kingdom for 6s., similarly employed. But are the people willing to work?—they are; but there is no person to employ them. One simple fact will show whether or not they are willing to work; and it would be easy to adduce a thousand facts in illustration of the subject.

A short time since, I shipped a cargo to England. It was at a good distance from the water, and had afterwards to be taken alongside the vessel in boats; the whole of which, however, was put on board in *four days*, and for the sum of 5l. The vessel had a quick run to England, where she had every convenience for discharging, being close to a quay. I should have remarked that it was much easier to discharge than to load; but it took a week to discharge the cargo, and the cost exceeded 15l. This very day a woman has gone a journey of 60 miles, as a messenger, for 6d.; but the business not being urgent, I did not request her to return again until to-morrow; but she has often performed the journey in one day. This woman, and hundreds more in this locality, would pray for the employers who would enable her to earn a 6d. by travelling the moderate distance of 60 English miles. There are also hundreds and thousands of able-bodied men who would thankfully work hard from morning till night for a *sufficiency of food*, but the work is not to be obtained; and the consequence is that they are shut up in the Union workhouses in idleness; and those who are paying poor-rates for their support are fast verging to the same state of pauperism; but, notwithstanding all this, neither life nor property is insecure. I have seen the people die from starvation, and dogs afterwards devour their remains. Hundreds—nay, thousands—died in this locality from famine and starvation, while food was rotting in storehouses; but there were neither robberies nor murders committed. Women have actually taken a *dead* and a *living child* on their backs to the graveyard. The mother has buried with her own hands her dead child, and waited for the living child to die also, and buried it with the other. These are incontrovertible facts; and yet there was neither danger to life or property. I have been—in fact, I have myself carried thousands of pounds without any guard or protection in remote districts—where the people were dying in thousands from starvation—I have travelled at all hours of the night over lonely mountains, and carried large sums of money about me, and no person molested me—I was as secure as if in Windsor Castle, and so was everybody else. At stated times, it was as well known to the people as to myself that I carried large sums of money; and I firmly believe, generally speaking, that the population of the western parts of the county of Cork would submit to starvation and death rather than do an injury to any man or his property. Surely, then, in the face of these statements (they cannot be contradicted) the fear of insecurity to either life or property cannot be the cause that prevents Englishmen investing capital in Ireland. The "Encumbered Estates Bill," and the "Plantation of Connaught," appeared for a time to be the *panacea* for all the ills of Ireland. Most of the estates, however, are so encumbered that they must soon change hands; and all that is required to make these valuable is capital. But the capital is not in this country; and unless those who possess it are disposed to trust their lives and property in this country, things will continue to go from bad to worse. But is the land, generally speaking, capable of improvement? I do not mean to state that crops of *wee candles* are seen growing in the bogs, or that *streams of vinegar* are found therein; but the land is undoubtedly very fertile, and, with proper management, would yield an enormous produce; it is, therefore, a safe investment for capital. The fisheries may also be turned to profitable account; but it will require time, care, and capital to work them profitably. Those who expect to find the coasts teeming with *red herrings* and *Newfoundland cod ready cooked*, and asking the people to come and

described some time ago in your Journal, and has been
 ces. Its cost is 1s. 3d. in this town; and any one is at libe
 rary upon it. I trust your readers will duly appreciate in
 ard.—JOHN CHANE: *Lee-crescent, Birmingham, August 31*

light, and burns steadily in the wick of the lamp alone. This lamp has the valuable property of remaining cool, and has been much used in the Harrington Mill Pit, the Whitehead Pit, and the Engine Pit.

It may appear surprising that these facts have not been given to the community long before the present time. I can readily explain.

The enthusiasm of Sir H. Davy's personal friends, upon his arrival in our coal district, I need not describe. I will merely mention that the late Earl of Durham (then J. G. Lambton, Esq.) and his brother were residents in Dr. Beedoe's house at Clifton, near Bristol, during Sir H. Davy's residence at Dr. Beedoe's, as his operative chemist, and the young gentlemen were on friendly terms with him. The late Dr. Harrington, Bishop of Durham, a kind friend to Sir H. Davy, interested on behalf of Davy, his protégé, the late Rev. Dr. Gray, prebendary of Durham, afterwards Bishop of Bristol; and it must be acknowledged that the last-mentioned gentleman, by his enthusiasm for Sir H. Davy, proved himself worthy of the patronage of his bishop. Dr. Gray had an able colleague in the Rev. John Hodgson, who wrote many eulogiums on behalf of Sir H. Davy, read at different meetings of the Sunderland Society for Preventing Accidents in Coal Mines, A.D. 1812, and wrote most energetically in favour of Davy, though I never heard that he performed a single chemical experiment, except breaking down coal, water, and raising steam in a gas, which he said was inflammable, and this Sir H. Davy takes due care to rectify in his book. Though last, not least, the "fascinating" views in our district, the late John Buddle, was a determined admirer of Davy. If the above-mentioned persons were energetic on behalf of Davy, Buddle, from the first moment of their acquaintance to his death, was most enthusiastically so; the latter person took an unflinching courage to me, from Mr. Holmes's publishing very inconsiderately in his book a private letter, written to him by me, which was never intended to be sent by any person, and then Holmes himself, who was a friend of mine, who then resided in London, did not long visit at my house, not only turned Mr. Buddle against me, but also carried with him many other viewers, who, till that unfortunate affair, I had strong reasons for considering as my personal friends. Sir H. Davy, and the late eminent engineer, Mr. George Stephenson, knew the world better than I did; and when they were reaping thousands, and receiving kindnesses on all sides, I was vituperated, particularly anonymously, as unworthy of any attention.

From my position in Sunderland, I could not, of course, count upon a single friend among the coalowners and lessees of that day, as might have been expected; and it would have been very inconsiderate on my part (a country physician) to have even complained in the pages of any of the publications of the day, or to have published, at my own risk, any explanation, in order to maintain that credit which was justly due to me as the author of safety-lamps, and who had personally carried the original safety-lamp in his own hand into one of the Marquis of Londonderry's coal mines, A.D. 1815, in which it was acknowledged that there was at least 100 acres of fire-damp; and, accordingly, as my gentlemen express themselves, "I allowed judgment to go by default." It is a melancholy fact that, in the words of the Scriptures, "A little leaven leaveneth the whole lump;" for by no means the youngest in respect to former patrons and abettors of Davy's safety-lamp in this district, they have all been "called to account."

I was attending a "working meeting" of the Institute of France upon the 4th of June, 1829, when one of the members mentioned the death of Sir H. Davy, which took place at Geneva at three A.M., on the 29th of the previous month, which I regretted.

Sir H. Davy was acknowledged to be one of the first men of science of his day, and by none, till a certain period, more admired than by the present writer; but it is due to myself to declare that he acted to me, who never defended him directly or indirectly, in a most unjust and unexpected manner. Need I remark, that I was prompted in my humble position by humanity solely. Sir H. Davy, in respect to his safety-lamp, was, in his day, lauded to the skies, and that before his lamp was suitably and extensively tested in coal mines. For this dangerous lamp he received from the coal trade, then in combination, and in great numbers, a value of two thousand five hundred pounds, and was created a baronet. Mr. George Stephenson, in the year 1834, in conversation with a friend of his and myself, remarked to him—"You know Dr. Clanny; the reply was—"Yes, he is a friend of mine." Mr. Stephenson then remarked, in respect to safety-lamps—"There is nothing due to Davy, or to me; Dr. Clanny has the sole merit in respect to safety-lamps." When my friend mentioned this to me, I made the simple reply—"If Mr. Stephenson were called before a Committee of the House of Commons, would he make this candid acknowledgment?" My friend replied—"That is another affair," and so it was, for in the next year, 1835, I was present at the Committee of the House of Commons, in respect to accidents in coal mines, when he was examined in evidence, and that evidence, as your readers may see in print, was so very peculiar, that I need not upon it offer a single observation. It is known to your readers, that in the race between Stephenson and Davy, as original promoters of safety-lamps, the wise men of the day awarded Mr. Stephenson nearly one thousand pounds, which astonished him, and many other clever men. The other three, or perhaps four, of the "Geordie" lamps, as Mr. Stephenson's safety-lamp was designated, in compliment to his name (George Stephenson), are employed in some of our collieries at the present day. This was the commencement of Mr. Stephenson's career; and hence the origin, from which, by his innate talents, he achieved a princely fortune. At this moment I remain in *status quo ante bellum*.

Sunderland, August 29. W. REID CLANNY.

P.S.—In corroboration of the facts narrated above, vide, *passim*, Report of the Select Committee of the House of Commons on Accidents in Coal Mines, A.D. 1835, and the Report of the South Shields Committee on the same subject, and also a Treatise on the Working of Collieries, by Matthias Dunn, mining engineer, 1848.

THE SEWAGE OF LONDON.

Sir,—Letters have appeared in your paper for two consecutive weeks, upon the necessity of improving the sanitary and sewage condition of London. I agree with the main tenor of "C. E.'s" letter, which, in my opinion, contains much matter in a few words, and I am in consequence induced, and anxious to add my little endeavours to the realisation of so benevolent a scheme, as the supply of an unlimited quantity of good and wholesome water to the inhabitants of London. The matter is one which has engrossed much of my attention for a long period, and after arranging in my mind various plans, each has succumbed to the one which I shall describe, after giving a few particulars relative to the present source of supply, and then remarking on the inefficiency of plans which have from time to time been proposed for this object.

The metropolis is now supplied by eight water companies, six of which draw their water from the Thames, from whence it is pumped into reservoirs; here it is allowed to subside and filtrate, but this process is only so far effective as to retain organic matter and large substances; for, it is obvious that it cannot purify water which is diluted with the excrementitious and filthy contents of all the sewers, the putrescent matter from hospitals and slaughter-houses, the effluents of chemical works, and the many manufactories which wall its banks; and this insalubrious solution is only silted up to the public at an enormous charge. The evils concomitant on the use and consumption of such a fluid must be numerous, and must also fasten themselves more particularly to the poorer class, whose limited means are restrictive to the purchase of a sufficient quantity of this indispensable article, and it requires no argument to prove that many of the diseases peculiar to the lower orders spring therefrom.

Several plans have been proposed for improving the supply, such as to form new companies, to draw water from a higher point of the river; but the injudiciousness of this is apparent, when it is considered that the river is polluted by the excretions of various towns, villages, &c., on and contiguous to its course.

Another suggestion has often been made to sink Artesian wells, but on the authority of Dr. Buckland, and others who have devoted some consideration to the chalk basin of London, it is pronounced to be inadequate for anything like the required wants; and this is evidenced by the few wells already sunk, which are also capricious in their yield, for it is not a matter of unfrequent occurrence that the supply fails, and in the London breweries they are compelled to accommodate each other, by not drawing their water at one and the same time; besides, the nearest point to which water has risen in them is 50 feet from surface—consequently this, as well as any plan of taking it from the Thames, would require the intervention of mechanical power to deliver it to the consumer, and thereby entail him with a perpetual expense to support it, which is objectionable, if it can be in any way removed. The plan which I will now briefly propose will, I believe, do it. Let a reservoir, or reservoirs, be placed in the vicinity of the metropolis, at an altitude equalling the average height of domestic buildings; from the reservoir carry pipes into the country, in such manner as to have the principle of a syphon. Let streams from never-failing springs be conducted by open water-courses to them, and let the pipes be of such diameter, as to give 10 gallons of water per diem to each individual. It will be seen that this plan has the advantages of being self-acting, requiring not the least machinery—consequently liable to no derangement, and possesses the important requisites of certainty and cheapness of supply. From calculation, I find it could be constructed, to supply two millions of people, for 18,000l. per mile, which is much under the cost of some of our discount railways for the same distance. I would recommend such a plan as this, or any other public plan, to be carried out by the inhabitants, who should entrust the execution to competent men; when completed, a body of officers might be constituted to protect it, and manage affairs. The capital could be raised at interest, and repaid by rates levied on the inhabitants, or by a per centage on the consumption. The payment of the capital might be extended through a space of 30 or 40 years; when liquidated, the works to be the property of the public, who should then pay only enough to meet current expenses.

It would be desirable to form a reserve fund for contingencies, or for repairs which the works might require, and the rates might be slightly increased for this purpose; but such contributions would soon terminate, as this fund in a short time would get sufficiently large, and support itself by judiciously investing it at interest. Such an arrangement as this would benefit the inhabitants to the fullest extent, who would receive what now supports the present wealthy and careless companies, whose interest is not to improve the quality, or to augment the quantity, of their water without additional payment. By such a plan as this, I believe it is possible to make London one of the best supplied towns in the kingdom, and that, too, with an expenditure much below the value of the result.

Other propositions may come from your correspondents to carry out this object, and they may advise a consolidation of the existing companies; but it can hardly be expected that those companies will consent to give up their present high profits for lesser ones; and without it was the case, the inhabitants of London would still suffer from the oppressive charges

now made. These companies have their dividends to make, and would strenuously oppose any scheme likely to affect them; but the people should be shown the evils in the existing state of things, and be brought to solicit the interference of the Legislature in the matter. In the meanwhile, Mr. Editor, you ought not to be idle, but attend to the suggestions of "C. E.," and, after selecting a plan, urge it incessantly until it is accomplished. I am anxious, Mr. Editor, to see this, or any other equally effective and cheap plan, carried out; for it is high time to give the population of our dense cities something more than the filtration of a slimy and fetid fluid for drink, if we intend to keep down the per centage of mortality.

Goulgreave, Sept. 6.

JOHN DARLINGTON.

SCOTTHORN'S ROTARY ENGINE.

Sir,—Being absent from town, I did not observe the communication of "Iron" in time to answer it for your Number of this day, and my inability to refer to the works mentioned by him, so as to point out the distinctions between the inventions of Flint, Wilcox, and Scotthorn, precludes more than a passing remark at present. However, I think I may unhesitatingly allege that the opinion of "Iron" has been expressed with a great want of caution. I distinctly recollect that in forming an opinion on Mr. Russell's brochure, on the *Fallacies of the Rotary*, I had under my consideration, amongst others, the two inventions referred to, which are identical with Scotthorn's only so far as they are of the same class—i.e., revolving pistons. I fear not to assure your correspondent, that he will find his statement, which implies that the practical objections to the soundness of the principle of the two earlier engines prevail in Scotthorn's case, is erroneous. In pronouncing the arguments of Mr. Russell, as well as the subject of rotaries generally, as on the crank, inconclusive, and founded upon mere theory, unassisted by practical information, I likewise observed the practical defects of Flint's and Wilcox's engines, which have excluded them from adoption.

I do not wish to occupy your valuable space with vague allegations, but if you will permit me, I shall return with greater certainty to the subject when I have an opportunity of referring to the diagrams of the rival inventions; and in the mean time I take the liberty of suggesting to "Iron" the propriety of more careful examination of the details of the three inventions, and retracting, if he justly may, his hasty assertion. Probably, "Iron" may have been misled by the similarity of certain parts, but which, in Scotthorn's invention, have been executed so as to meet the practical difficulties, and deserve the credit of originality.

Reading, Sept. 1.

ENGINEER.

THE BRITANNIA TUBULAR BRIDGE.

Sir,—Will you oblige me with space in your valuable Journal for a few remarks with reference to that unique undertaking, the great "tubular bridge?" I have no doubt the readers of your useful columns would, with myself, regret the accident to the great hydraulic press, and the consequent delay of the consummation of that stupendous undertaking. That the means used for raising the tubes are quite adequate to the task assigned, I think no one acquainted with mechanics will doubt for a moment; but now there is just ground to fear that a similar misfortune may befall a second or third cylinder, which, of course, would greatly retard the work. I feel sure that the worthy son of the great George Stephenson will pardon an humble individual for suggesting that the four great tubes might be safely placed in their respective destinations before it is possible to have the hydraulic cylinder replaced—viz.: by means of tidal power.

The plan I propose is to place pontoons, or dismantled ships, under the ends of the tube at low water, on which suitable scaffolding, abutting under the tube, should be erected; it will be evident that, as the tide flows, the tube would rise. If we reckon the difference between low water and high water at 20 ft., and allow 5 ft. for extra draught of pontoons or ships, from the burden of the tube, it would give 15 ft. per tide; 15 feet being added to the scaffolding, or abutment, at low water, another lift might be taken, and so on, until the tube reached the desired elevation. By this means the great expense of constructing and elevating the huge hydraulic presses, two 40-horse power steam-engines, the suspension chains, lifting frames, &c., would have been obviated. Tidal power might have been used to work the press as easily and readily as a steam-engine could be applied, and an almost unlimited amount of power might have been brought to bear, either for lifting the tubes or working the presses. I would advise the two parallel tubes to be lifted at one operation, for three reasons—economy in constructing the intermediate scaffolding or abutments, superior proportions of scaffolding, and great saving of time. Suppose the two tubes to weigh 4000 tons, if a buoyant power equal to 6000 tons is applied to them, they would ascend as naturally as a cork floats upward. Had the ends of the tubes been temporarily filled in, they would have floated buoyantly on the water to the desired spot, and, with the aid of two steam-tugs, might have been manoeuvred into the grooves in the piers, dispensing altogether with the pontoons.

In conclusion, I would beg to suggest the practicability of constructing the tubes on a tram-way, at the desired elevation, on either shore, and in a right line with the intended bridge, uniting in one the two centre tubes and one land tube—in all, 1180 ft. I think it will be clear that, with the aid of three or four locomotives, the tube might be propelled upwards of 500 feet across the straits, and considerably beyond the Britannia pier, before it lost its equilibrium, and by weighting the end on *terra firma*, it might have been pushed three parts of the way across the straits without any pressure on the Britannia pier, which, of course, would require to have a roller, or fixed centres, for the tube to run over, and uniting with the land-tube set up on the opposite shore, would complete the whole. Perhaps it would be requisite to make of in suspension chains to throw the weight from the ends of the tube on to a tower, forming a portion of the tube, and, when permanently fixed, to surmount the Britannia pier; and then the chains might be transposed, so as to counteract the constant vibration the tubes will be exposed to.

Edward-st., Hampstead-road.

JOSEPH FAULDING.

ON THE GENERAL SYSTEM OF ATMOSPHERIC TRACTION, AND PIATT'S METHOD OF PROPULSION BY COMPRESSED AIR.

Sir,—In resuming the subject of atmospheric traction and propulsion, I shall merely call attention in a very brief way to those particular topics of consideration which seem to have been mainly instrumental in influencing the results of engineering calculation, as well as those of actual experiment. I have already spoken of the leakage resulting from the use of Samuda's valve; but I think it right, at the same time, that we should clearly understand the precise measure of this evil as determined by experiment. In the trials upon the Dalkey extension, already referred to, it was found that the average leakage per minute of the vacuum tube and connecting pipe was equal to a total of 1035 feet of air, with a pressure of 5 lbs. to the inch—the mercury in the barometer gauge standing at 29 in. Under like circumstances of exhaustion, with a tube 4 miles long, and 15 in. in diameter—such a tube, in fact, as the patentees propose to adopt in general practice—the mean leakage per minute would be equal to 1673 cubic feet, which, in a period of eight minutes, the time occupied by a train in passing from one extremity to the other, with a uniform velocity of 30 miles an hour, would amount altogether to 13,384 ft., or very nearly half the entire capacity of the tube and connecting pipe. It must be recollected also that a due allowance has been here made for the varying position of the piston in the tube during the time of transit, and that the experiments were carried on when the longitudinal valve was in fair working condition. Had it been otherwise, and the valve considerably out of order, it is difficult to say, with accuracy, how far the amount of leakage might have extended; but we are quite sure that the demand upon the engine would have been excessive and severe. In fact, the comparatively feeble pressure of 8 or 10 lbs. to the inch, exerted by the external atmosphere, is insufficient to close the valve with sufficient tightness; and the arrangement in this respect is not to be compared with Piatt's, where a far more yielding material than leather is employed as a seat for the valve, and an internal pressure of four or five times the former amount is constantly brought to bear upon it. The truth of this position is shown by the working of the model at Peckham, which, though coarsely constructed in the beginning, and subsequently exposed to much rough usage, continues, nevertheless, to be practically air-tight.

The power expended in working a line upon the principle of atmospheric traction being as the main resistance offered to the motion of the air-pump, multiplied by its velocity, it follows, as this pressure has been shown to be tolerably uniform throughout the range of barometrical measurement likely to be available for railway purposes, and as the velocity of the piston necessarily increases with the degree of exhaustion obtained, that neither for the purpose of improving the tightness of the valve, nor to meet the contingent demands for additional power, to which every railway system is occasionally liable, can the balance of elastic force, acting

within the tube and upon the piston, be caused to exceed a very narrow limit of atmospheric pressure.

It has just been suggested to me, that a great and apparently an insuperable difficulty attending the use of compressed air as a propulsive agent is to be found in the fact, that the pressure and resistance of the air in the condensing pumps are constantly increasing as the process of condensation proceeds; while the steam power employed in overcoming that resistance is a fixed and unalterable quantity. Precisely the same objection, theoretically speaking, and within certain limits, would apply to the vacuum system; but it has been seen that it does not obtain in practice. The unalterability of the engine power is quite imaginary. I quote the following sentence from a report upon the Kingston atmospheric, in the *Railway Times* for 1843, page 1298. It refers to the stationary engine employed thereon, in which the initial pressure of steam is 40 lbs. to the square inch working expansively at one-fourth stroke, and subsequently condensed in the usual way:—"The degree of cut off is regulated by a cam, worked by the governor, and is, therefore, proportionately shorter as the duty of the engine is less; but in no case is the steam admitted for a greater distance than one-fourth of the stroke." Here is the principle of accommodation between power and resistance in regular operation; and the mean pressure upon the piston throughout the whole stroke regulated with the greatest nicety. Very simple methods of accomplishing this are adopted in practice, and it is needless to remark that the minor inequalities of relationship between power and resistance are balanced by the action of the engine itself; for, supposing the power to be in excess, additional velocity immediately ensues, with a consequent additional resistance in the condensing pump, by reason of friction, &c.; and not merely this, but the throttle valve being partially closed by the rise of the governor, prevents the free ingress of steam—so that the cylinder has not received its fair proportion by weight, when the communication with the boiler is cut off.

Another objection has been urged against the system. At high velocities the longitudinal valve is torn with such violence from its seat, that not only is the valve itself materially injured, but the composition with which it is sealed is wastefully dashed in every direction. In reply to this, I beg to say that such an objection holds good with the vacuum principle alone, and that in working with compressed air the valve is not torn from its seat at all. It lies loosely in the tube, and is merely pressed into its position as the piston passes, and then instantly sealed by the sudden impact of the condensed air which follows. Neither in this system is any composition whatever necessary.

On the whole, then, considering the superior economy and efficiency of a small tube supplied with elastic power, which may be extended at pleasure, considering the saving in the construction and maintenance of roadway, by reason of the adaptability of the power to steep gradients, and the absence of all that wear and tear, and enormous expense, which attends the transit of the ordinary locomotive, and further bearing in mind that the size and cost of the steam-engines, air-pumps, and reservoirs, for condensing and receiving the air at the stations, are in the aggregate greatly below either the estimate, or the actual expenditure, pertaining to any other system, which has yet been proposed to the public, I think it will be difficult to find two opinions upon the subject; and I have little doubt that those who are most interested in the practical accomplishment of cheap and efficient travelling, will see the necessity for a further investigation into its principles.—ISHAM BAGGS: London, Sept. 6.

MANUAL POWER v. HORSE AND STEAM POWER.

RESPECTED FRIEND,—Permit me to inform your correspondent, "Engineer," that no reasoning of his, either past or present, has in the least changed my opinion on the subject, and that I shall not adopt his unsound and extravagant plan; neither am I alarmed at his quivering description of a quagmire, or slippery account of timber tracks. I am now to offer another comparative statement. In order to form some idea of what would have been the difference between the effects upon the line from Bristol to Bath (supposing the line to have finished at Bath), the cost of which work, including the works at both places, is estimated at the astounding amount of 800,000l., for less than 12 miles, making due allowance for the undulations of the turnpike-road, by allotting two engines to one on the rail, or 50 per cent. in favour of the latter, the account may be thus stated:

TURNPIKE-ROAD.		RAILWAY.	
Capital—Cost of timber track	£12,000	Capital	\$300,000
Two engines	2,000	One engine	1,000
	£14,000		\$301,000
EXPENSES.		EXPENSES.	
Interest	£700	Interest	£40,050
Tolls	180	Repairs of road	140
Wear and tear	500	Wear and tear	250
Ditto of track	500	Fuel	100
Fuel	200	Two engines	150
Four engines	800		
	£2380		£40,730

A thousand passengers per day, at 3d. each for 12 miles, would be ample to realise 18 per cent. upon the turnpike-road; whereas it would have required something like 2s. 6d. to 3s. each to have realised 5 per cent. on the railway—thus proving that even gold may be bought too dearly, which I hope, ere long, to be enabled practically to demonstrate. Slangeate, Lambeth, 9th mo. (Sept. 7). T. MOZLEY.

IMPROVEMENTS IN RAILWAYS, ENGINES, AND CARRIAGES.—Mr. P. M. Parsons, of Lewisham, has recently secured a patent, by which he claims—1. The improved railway turn-table, in so far as regards the peculiar arrangements and combinations by which the moveable platform, when at rest, is supported, partly on a central pivot, and partly on moveable or temporary supports, which are forced to their bearings by means of self-acting agents, and are withdrawn when the table is required to be turned, leaving the table supported by the central pivot alone while rotating.—2. Securing the rails of railways directly to the longitudinal or cross sleepers by means of wooden trenails without the intervention of the ordinary chairs, and also encasing the heads of such trenails in timbers or ferrules.—3. The plan of securing the rails by inserting them in recesses cut in cross sleepers, and making them fast therein by keys or wedges.—4. The methods of securing the joints of rails, which are attached to the sleepers, without the aid of chairs, and which are supported by the sleeper itself immediately at the joint, by means of clamps or splices.—5. The employment in railways of switches with the tongue rails of the improved forms, whether as regards the whole or only points of the tongue rails; also securing the fixed rails into the switch chairs by means of wooden keys, where tongue rails, which are less in depth than the fixed rails, are employed.—6. The improvements in railway crossings, that is to say, in so far as regards the peculiar form given to the points.—7. The forming of pairs of wheels and axles of railway engines and carriages all in one piece, with the exception of the tyres; and also the mode of constructing railway wheels by forming the spoke out of a flange on the inside of the tyre or rim, and the mode of attaching the tyres.—8. The forming of the springs of railway engines and carriages of one or more plates of steel or other flexible material, the ends of which are rigidly attached to bearings or brackets fixed on the framing of the engines or carriages, or to the framing of the engines or carriages themselves, if of a suitable form, in such a manner that when the load or strain is applied between the two fixed ends of the springs it will cause the said springs to yield, bend, or spring, at or from the points of attachment as well as at the points where the weight or strain is applied.—And, 9. The mode of constructing the draw-bars or hooks of railway engines and carriages, by which they can be screwed in or out to any required length by means of a lever at the ends of the carriage attached to them, or a nut into which they are screwed.

RAILWAY FRAUDS.—The committee of investigation of the York and North Midland Railway Company have just presented their second report on the management of the company's affairs, and the conduct of the great trickster (Hudson); and the statements it contains, showing the careless unbusiness-like manner in which all the transactions have been conducted, are absolutely astonishing, and disgraceful to his co-directors, in suffering themselves to be the easy dupes of such a schemer. For 18 months, literally no books were kept at all—the banker's pass-book being the only authentic evidence of the company's transactions. When a new secretary was appointed, in 1845, what were termed "the books" were in such inextricable confusion, that it was found necessary to run a sponge over the whole, purchase a new set, and begin *de novo*. Some of the most inconsistent errors have been discovered by the exertions of the committee. As far back as 1844 he made a contract for 2500 tons of rails, at 51s. 18s. per ton, 785 of which were supplied to this company, and the remainder to the Newcastle and Darlington Company; but in settling, he charged the latter company 2203l. too much, which he has to refund with interest. Another 3000 tons he purchased at 91s. per ton, he sold the company at 121s., thus pocketing 9000l., of which his brother directors knew nothing. Another still more flagrant transaction was, that in Oct. 1844, he made a contract for 10,000 tons of rails, at 61s. 10s. per ton, and sent 7000 tons to the York, Newcastle, and Berwick, 500 tons to the Newcastle and Darlington, and 2500 tons to this line. For these he charged 121s. per ton, securing a snug bonus of 35,000l. on the transaction; and the cream of the fact is, that he bought of, and sold to, himself, for no trace can be made of any such purchase being agreed to by the board, nor any minute to such effect, nor any assent being given by any director, engineer, or officer, the only statement is the payment of the money; this purchase cannot bind the company, and the whole transaction was illegal. This amount he will also most probably have to refund. We must, for further information, refer to the report itself, in which will be found almost endless instances of similar tricks, showing the absence of all principle in Hudson's endeavours to enrich himself, and the most criminal indifference to his proceedings on the part of his colleagues.

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New Patents.

SPECIFICATIONS ENROLLED DURING THE PAST WEEK.

Specification of patent granted to W. H. Balmann and E. A. Parnell, St. Helen's, Lancashire, manufacturing chemists, for improvements in the manufacture of glass, and in the preparation of certain materials to be used therein, parts of which improvements are also applicable to the manufacture of alkalies. These improvements relate to the mixture and preparation of materials for the formation of glass. One mode of preparing the materials consists in heating the sulphate of soda or the sulphate of potash, or the sulphate of barytes, together with sand and carbonaceous matter, and maintaining the whole at such a degree of heat as shall cause them to combine and form the silicates of the different bases. The feature of the other mixtures is the use of deoxidizing agents, so that the sulphates may be used in making glass. The sulphates do not act destructively upon the pot, and are much cheaper than the carbonates. Another improvement is in the use of a furnace of a particular description, for alkalies and silicates. The raw material is thrown on an inclined bed at the further end of the furnace, and, as it melts, runs down to the bottom of the incline, where there is an opening, through which it flows into moulds, or into a vessel containing water. These improvements constitute the subject matter of the claims.

Specification of patent granted to W. H. Green, Basinghall-street, London, for improvements in the preparation of fuel. These improvements consist—1. In the construction of a chamber for drying peat. The chamber is charged with peat from the top, till it is nearly full. Under the floor there are a series of flues, heated by two furnaces, and within the flues there are a number of upright iron pipes, these pipes have no internal communication with the flues, but are open at bottom to the external atmosphere, and at top to the drying chamber; the air in the tubes is heated by the flues, and the hot air passing through the peat absorbs all moisture therefrom.—2. In the construction of ovens for drying peat. The dried peat is placed in baskets made of iron hoops, and put into the ovens; the gas evolved in the process of drying is conducted from the ovens or retorts into a cold water tank, or condenser, where the products capable of condensation are completely condensed, the residue escaping by a pipe (through which a stream of cold water runs) into the tank, is still further condensed, and the remaining gas is then discharged into the furnace, where it assists in heating the coke ovens.

Claim.—1. The drying chamber, as described.—2. The method of arranging ovens or retorts for drying peat.

Specification of patent granted to J. Baird, Gartsherrie, Old Monkland, Lanark, Scotland, ironmaster; and A. Whitelaw, of the same place, manager, for improvements in the methods or process of manufacturing iron.—These improvements are in the means employed to heat the air used in the manufacture of hot-blast iron. The upper part of the blast-furnace is surrounded with a hollow chamber, having free communication with the furnace by means of a number of openings in the brickwork; the pipes for heating the air for the blast are arranged round the hollow chamber, where they are sufficiently exposed to the action of the furnace to produce the requisite heating of the air within them, and yet are sufficiently protected from the direct action of the furnace, to prevent their being speedily destroyed.

Claim.—The arrangement described of placing pipes for heating air to be employed in hot-blast furnaces in the arched top of the furnace.

N. Defries, Grafton-street, Fitzroy-square, C.E., and G. B. Petit, Brook-street, New-road, gas engineer, for improvements in applying gas to heat apparatus containing fluids, and in heating and ventilating buildings; also improvements in gas fittings, and in apparatus for controlling the passage of gas.—Mr. Defries has disclaimed all the above title, excepting—1. Improvements in applying gas to heat apparatus containing fluids, and in heating and ventilating buildings. The first improvement is in the method of applying gas to heat baths. The bath has a double bottom, the upper one plain, and the lower corrugated, and, being corrugated, presents a larger surface for the absorption of heat emitted by gas-burners placed below it than if plain. The second improvement consists in applying the heat evolved from gas lights, when used for illuminating purposes, to heating fluids. The heated products of combustion are conveyed by pipes to any convenient spot. Around these are other pipes containing the fluid to be heated, which may be drawn off as required; or it may be made to circulate in pipes for heating apartments.

Claim.—1. The employment of gas, in the manner described, for heating baths.—2. The employment of the heat evolved from gas used for illuminating purposes to heat fluids.

LIST OF PATENTS GRANTED DURING THE PAST WEEK.

M. Macfarlane, Thistle-street, Glasgow, copper-smith, for certain improvements in machinery, or apparatus for the drying and reconditioning of wools.

A. Hing, Sunning-street, Steyner, engineer, for an improved apparatus for exhausting and driving atmospheric air and other gases, and for giving motion to other machinery.

A. R. Terry, Manchester-street, Manchester-square, engineer, for improvements in the manufacture or preparation of firewood.

J. M. Heath, Hanwell, Middlesex, for improvements in the manufacture of steel.

Sir John Macneil, Knight, of Dublin, and T. Barry, of Lyons, near Dublin, mechanic, for improvements in locomotive engines, and in the construction of railways.

J. Hosking, of Newcastle-upon-Tyne, engineer, for an improved pavement.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

W. Satchell, Uppingham, pump and fire-engine.

H. Holden, Liverpool-street, King's-cross, tailors' measure.

H. N. Nissen, and G. F. Parker, Mark-lane, case envelope.

A. Lindsey, Greenock, spindle bearing.

Neal and Wilson, Grantham, Lincoln, stone-cutting machine.

T. and M. Stainton, South Shields, Durham, founders and general smiths, windlass.

Augustus Paul and Brothers, Paris, needle threader and case.

J. Dunley, Northampton, an effluvia trap.—*Mechanics' Magazine.*

COAL MARKET, LONDON.

PRICES OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 15 6—Carr's Hartley 15 6—East Adair Main 13 6—Hastings Hartley 15 6—Hedley's Hartley 13 6—Hollywell Main 15 6—New Tanfield 13 9—North Percy Hartley 15 6—Ord's Redbush 14—Ravensworth West Hartley 15—Tanfield Moor 14 6—Tanfield Moor Butes 13 6—West Hartley 15 6—West Wylam 15 3—Wall's End Brown's 14 6—Hedworth 13 6—Hilda 15—Heston 15—Morrison 15 3—Northumberland 15—Percy 14 6—South Killingworth 13 6—Eden Main 15 6—Bell 15 9—Belmont 15 3—Bradley 17—Heston 17 6—Hawthill 17 6—Lambton 17—Lunley 15—Pinner 17 3—Ravensworth 17 3—Stewart's 17 3—Whitwell 15 6—Caradoc 15 9—Cassey 15 6—Hartlepool 15 3—Hough Hall 15 3 to 15 9—Adelaide Tees 15 3—Cowdon Tees 15 3—Seymour Tees 15 3—South Durham 15 3—Helen's Tees 14 6—Tees 17 3—West Cornforth 15—Derwentwater Hartley 15—Hartley 15—Ships, 129; sold, 69.

WEDNESDAY.—Carr's Hartley 15 6—East Adair Main 13 6—Hedley's Hartley 13 6—Morpeth Hartley 14 6—New Tanfield 13 6—Ravensworth West Hartley 14 6—Tanfield Moor 14 6—Wylam 15 3—Wall's End Hedworth 13—South Killingworth 13 6—Wharfedale 15—Eden Main 15 6—Belmont 15 9—Bradley 17—Heston 17 3—Lambton 15 9—Lunley 15 6—Russell's Hedley 15 6—Stewart's 17—Whitwell 15 6—Caradoc 15 9—Cassey 15 6—Hartlepool 15 3—Hough Hall 15 3 to 15 9—Adelaide Tees 15 3—Cowdon Tees 15 3—Seymour Tees 15 3—South Durham 15 3—Helen's Tees 14 6—Tees 17 3—West Cornforth 15—Derwentwater Hartley 15—Hartley 15—Ships, 129; sold, 69.

FRIDAY.—Bate's West Hartley 15 6—Carr's Hartley 15 6—East Adair Main 13 6—Hastings Hartley 15 6—Hedley's Hartley 13 6—Hollywell Main 15 6—New Tanfield 13 9—North Percy Hartley 15 6—Ord's Redbush 14—Ravensworth West Hartley 15—Tanfield Moor 14 6—Tanfield Moor Butes 13 6—West Hartley 15 6—West Wylam 15 3—Wall's End Brown's 14 6—Hedworth 13 6—Hilda 15—Heston 15—Morrison 15 3—Northumberland 15—Percy 14 6—South Killingworth 13 6—Eden Main 15 6—Bell 15 9—Belmont 15 3—Bradley 17—Heston 17 6—Hawthill 17 6—Lambton 17—Lunley 15—Pinner 17 3—Ravensworth 17 3—Stewart's 17 3—Whitwell 15 6—Caradoc 15 9—Cassey 15 6—Hartlepool 15 3—Hough Hall 15 3 to 15 9—Adelaide Tees 15 3—Cowdon Tees 15 3—Seymour Tees 15 3—South Durham 15 3—Helen's Tees 14 6—Tees 17 3—West Cornforth 15—Derwentwater Hartley 15—Hartley 15—Ships, 129; sold, 69.

EASTERN COUNTIES RAILWAY.—At the STATIONS

of this RAILWAY (and of the London and North-Western, and other lines), the arrangements for the ISSUE OF SINGLE JOURNEY TICKETS have been completed by THE RAILWAY PASSENGERS' ASSURANCE COMPANY.

THE FAREMILES BEING—
3d. to insure £1000, if a first class passenger
2d. " 500, if a second class " } For the journey, irrespective of distance.
1d. " 200, if a third class " }

PERIODICAL TICKETS, to insure £1000, are obtainable on application at the RAILWAY STATIONS, or at the OFFICES of the company, No. 3, OLD BROAD-STREET, CITY, on the following terms:—
For three months, at a premium of... 10s.
For six months, at... 16s.
For one year, at... 20s. } With option to travel in any class carriage.

The Periodical Tickets cover the risk of travelling on any railway in the kingdom. Liberal and immediate COMPENSATION will be made in respect of the holder of any Ticket, in conformity with the Act of Parliament, when the accident is confined to personal injury; and when it terminates fatally, the full amount will be paid to the representatives of the party assured.

ALEXANDER BEATTIE, Secretary.
Empowered by Special Act of Parliament, 12 and 13 Victoria, cap. 40.

BRIMPTON TIN MINING COMPANY, DARTMOOR, DEVON.

AT WORK ON THE COST-BOOK PRINCIPLE, Which exempts shareholders from any liability beyond the amount of their shares, and enables them to withdraw at any time by giving notice to the purser to that effect.

In 256 shares, at £3 2s. each.—No shareholder to hold less than 4-256ths.

BANKERS—Devon and Cornwall Banking Company, Exeter and Totnes.

SOLICITORS—Mr. R. Robins, Tavistock.
PURSER—Mr. George Stranger, Holne, near Ashburton.
SECRETARY PRO TEM.—Mr. R. Tripp, Exeter.

OFFICES—BEDFORD CHAMBERS, BAMPFYLDE-STREET.

This MINE is situated at the bottom of DARTMEET HILL, in the FOREST OF DARTMOOR, in the parish of LIDFORD, DEVON; distant 16 miles west of Exeter, 13 from Tavistock, and 12 from Totnes.

THE SETT is about a mile long from east to west, and half a mile wide. There are several lodes passing through it in an east and west direction, which have been worked on by the late owner of the estate, from whence considerable returns were made; and no doubt exists that this mine will again take its stand as one of the most productive and richest mines in the county.

The subjoined report of Mr. John Hitchens (one of the most eminent practical miners of the day), and also the declaration of Mr. Tuckett, made before a Master Extraordinary in Chancery—that the mine was worked about 50 years since, and that it was abandoned by him solely for the reason therein stated—furnishes indisputable evidence of its great value.

As the meeting of the shareholders is to take place at the mine on the 27th Sept. for the purpose of carrying on the operations of the mine, applications for shares must be made before the 23rd September, to Mr. R. Tripp, Exeter.

DECLARATION OF MR. RICHARD TUCKETT.

I, Richard Tuckett, of Dunsbridge, in the parish of Lidford, in the county of Devon, yeoman, do solemnly and sincerely declare that I am now seventy-nine years of age; that about fifty years since I was in the service of Mr. Joseph Sanders, of Brimpton, in the parish of Lidford aforesaid, and that whilst in his employ I was in the habit of drawing with a slide-butt shaft from the shaft road, and also from a level in a field called the Potatoes Field, part of Brimpton estate aforesaid, down to the Stumps; and I continued drawing tin from the places before-mentioned, at different periods, for two or three years; and I further solemnly and sincerely declare, that I remember the mine at Brimpton being worked by the said Joseph Sanders alone for seven or eight years; and that the tin that was made, was taken to Tavistock by the said Joseph Sanders; and I further solemnly and sincerely declare, that I remember the said Joseph Sanders continued working the said mine called Brimpton, because he considered the miners were impeding upon him; and lastly, I solemnly and sincerely declare, I recollect the miners offered the said Joseph Sanders to work the said mine at a low tribute, but he, the said Joseph Sanders, refused their application.

Dated the 4th April, 1849.

THE OLD BRIMPTON MINE SETT.

REPORT.

Sir,—Having carefully examined this sett, and noted its various parts, as far as they admitted of inspection, with a view to submit my opinion thereon as to the probability of its future production of tin and copper, I permit me to offer the following observations:—In the first place—independent of living evidence—the ancient workings show that a vast amount of labour must have been bestowed in searching for ore, and from the sides of the excavations, stones of tin of rich quality have been found—clearly showing that the metal sought for, and that a great quantity must have been raised; in fact, the removal of this mine has been the theme sounding in my ears ever since my first recollection—my late father having, both from report as well as personal inspection, often expressed to me his desire to obtain the grant; nor do I myself the least dispute the correctness of his opinion, for I believe the lode, or rather lodes, are large, and must have been productive.

The sett is an extensive and sufficient one for the employment of capital, I think beneficially, as well as the exercise of mining skill, being from north to south from Bellerof Tor to Dartmeet, and from the East to West Dart Rivers, which furnish sufficient water-power for all the requisite purposes—such as pumping the water and drawing the stuff and waste out of the mine, as well as every purpose of dressing.

There is also timber of every description growing close on the mine, and the stratum of ground through which the lode traverses is of a soft and congealable character, so that this adventure can be carried out with all due economy.

I am informed the mine is 10 fathoms under the adit; I should, therefore, advise a water-wheel to be at once provided, with all the requisite appliances, either new or good second-hand, as the case turns out, and to clear and drive the adit level. Also clear up the shafts and workings, so as to be satisfied as to the whereabouts to begin operations for a permanent working, the which, if properly carried out, I am of opinion will lead to satisfactory results.

In conclusion, allow me to say, this sett, from the foregoing imperfect sketch of its prospects, is such as I should not hesitate to recommend to any spirited set of adventurers, to whom I should wish success, and I remain, Sir, your obedient servant,
Tavistock, July, 1849. JOHN HITCHINS.

DEVON.—HENNOCK IRON, STEEL, AND TIN MINING COMPANY.

ON THE COST-BOOK PRINCIPLE.

BANKERS—Devon and Cornwall Bank, Exeter and Newton Abbott.

SOLICITORS—Messrs. Kennaway and Buckingham, Exeter.

Capital £9450, in 4500 shares, at £2 2s. each, without further calls or liability. Deposit £1 1s. per share.

The promoters of this company propose to raise the above capital to work efficiently these very valuable mines of ironstone and tin ore, situated in the parish of Hennock, 12 miles west of Exeter, and 2 from Bovey Tracey, on the confines of Dartmoor.

These mines are not a new discovery, but possess the advantage of having had their merits tested to an extent that fully establishes their great capabilities, and warrants the expectation of a large trade at a highly remunerating profit.

Prospectuses and particulars supplied on application (if by letter, post-paid) to Mr. Tripp, Bedford Chambers, and of Mr. T. Sanford, Exeter; Mr. H. Luscombe, Plymouth; Mr. B. S. Stock, Bristol; Mr. C. P. Cameron, Liverpool; Mr. J. Lane, 80, Old Broad-street, Mr. Heron, 33, Clements-lane, and at the office of the Mining Journal, No. 26, Fleet-street, London.

TRELTON CONSOLIDATED MINES, comprising the SETTS OF WHEAL MARGERY AND WHEAL VENTURE, TIN AND COPPER MINES.

IN THE PARISHES OF ST. IVES AND LELANT, CORNWALL.

These mines, within the lands of Lord Viscount Wesslesley, are divided into 260 parts, or shares, and conducted on the Cost-Book System.

PROSPECTUS.

The part formerly known by the name of WHEAL MARGERY, comprehends within its limits nearly 500 fathoms in length, and 200 fathoms in breadth, and has within its boundary three east and west lodes underlying south, and two north and south lodes underlying west, and 2 from Bovey Tracey, on the confines of Dartmoor.

These mines are not a new discovery, but possess the advantage of having had their merits tested to an extent that fully establishes their great capabilities, and warrants the expectation of a large trade at a highly remunerating profit.

Prospectuses and particulars supplied on application (if by letter, post-paid) to Mr. Tripp, Bedford Chambers, and of Mr. T. Sanford, Exeter; Mr. H. Luscombe, Plymouth; Mr. B. S. Stock, Bristol; Mr. C. P. Cameron, Liverpool; Mr. J. Lane, 80, Old Broad-street, Mr. Heron, 33, Clements-lane, and at the office of the Mining Journal, No. 26, Fleet-street, London.

WHEAL VENTURE is about 1 mile south of the port of St. Ives, and 3 miles north of Hayle, and nearly adjoins Wheal Margery, and might be worked by the use of flat-rods, from Wheal Margery engine, if required. This little mine is now in working, and producing some tons of tin and copper monthly, which will more than pay the cost, and presents a considerable improvement in sinking and driving. The water is drawn by a horse engine, and the stuff by a horse-wheel, and is only 3 fathoms deep. Wheal Margery deep adit is within 150 fathoms of the Wheal Venture sett, and could be extended into that mine, which would come in fall 30 to 40 fathoms under the present working, and would uncover five east and west, and two north and south tin and copper lodes, all embedded in a fine mineral granite.

It is believed that Trelton Consols may be fully worked with an efficient steam-engine and stamps, for from £15 to £20 per share.

Shares may be had on application to Mr. John Rodda, Penzance.

DUISBURG IRON-WORKS AND MINES, IN WESTPHALIA, CLOSE TO THE RHINE.

Managed in England according to the principles of the "Cost-book System," and in Prussia as a *Société en Commandite*, under laws limiting the liability of the shareholders to their personal subscription.

Company's Offices, 28, Moorgate-street, City.

MAKE YOUR OWN GAS.—HOLLIDAY'S APPARATUS.

from 2s. 6d., complete, PRODUCES A PURE LIGHT, without wick or glass, will burn in the open air, without attention, for 10 hours, at one halfpenny per hour—being far superior to all other lights. Is well adapted for shops, and all public and private purposes.—May be seen at R. Holliday and Co.'s, the patentees' works, Huddersfield; No. 24, Oak-street, Manchester; Sussex-street, Sheffield; and No. 28, Holborn-hill, London.

INDURATED AND IMPERVIOUS STONE, CHALK, &c.

—AGENTS, with capital, are WANTED in all TOWNS to SUPPLY (under British and Foreign Patents) the great demand for HUTCHISON'S MATERIALS—hard as granite, impervious to moisture, vermin, &c.; the cheapest and most durable for all buildings, hydraulic, paving, monumental and decorative work.—The profits are large. Apply to HUTCHISON & CO., East Temple Chambers, London, or Tunbridge Wells, Kent, stating name, address, and capital at command.

N.B.—Houses cured of damp. The produce of soft stone quarries, chalk, plaster of Paris, wood, pasteboard, and all absorbent materials indurated to resist frost, vermin, &c. LICENCES GRANTED.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES AND CLOCKS.

E. J. DENT, 82, Strand; 33, Cockspur-street; 34, Royal Exchange (clock tower area). Watch and Clock Maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1846, 1840, 1842. Silver lever watches, jewelled in four holes, 6s. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8s. to 12s. each.

DENT'S PATENT DIPLIODESCOPE, or Meridian Instrument, is now ready for delivery.—Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

TO THE GUARDIANS OF UNIONS, AND OTHERS having the CHARGE OF THE POOR, and to the PUBLIC IN GENERAL.—THE BOARD OF HEALTH having, in their first circular, recommended the use of BRANDY in the medical treatment of persons labouring under the premonitory symptoms of Cholera, we think it right to publish the following important TESTIMONIALS in favour of our PATENT BRANDY, which has long been employed in preference to foreign for medicinal purposes, at St. George's, St. Thomas's, Guy's, and the Westminster Hospitals, and also in the Manchester, Bristol, and Brighton Infirmarys.

EXTRACTS FROM TESTIMONIALS.

"Your Patent Brandy contains as pure a spirit as the best varieties of foreign brandy." (Signed) EDWARD TURNER, Prof. of Chemistry, London University.

"For purity of spirit your PATENT BRANDY cannot be surpassed; it is also quite free from those acids which always contaminate the foreign spirit." (Signed) JOSEPH HUME, Toxicological Chemist to the Board of Exchequer.

"Your Patent Brandy is free from uncombined acids, which exist, more or less, in most of the brandies imported from France." (Signed) JOHN THOMAS COOPER, Professor, at Guy's Hospital.

"Grenadier Guards Hospital." "The two samples of your Patent Brandy I had an opportunity of laying before the Board of Officers, which sat at the Regimental Hospital last Saturday. Every member of the board approved of the brandy, and have ordered that it shall be used for the sick." Messrs. Betts & Co. (Signed) J. HANSON, Surgeon-Major, Grenadier Guards.

We beg to announce to all persons desirous of purchasing the GENUINE PATENT BRANDY, that the same can be procured in every town in the kingdom, at 3s. per bottle, each bottle being secured by our Metallic Capsule, or direct from the distillery, in quantities not less than Two Gallons, at 16s. per gallon.

BETTS & CO., PATENT BRANDY DISTILLERS, 7, SMITHFIELD BARS, LONDON.

The Patent Brandy, in combination with Ginger (GINGER BRANDY), may be had on the same terms, if preferred.

BY HER MAJESTY'S LETTERS PATENT.

JOHN BROWN'S CONICAL RAILWAY BUFFER, BEARING AND DRAW SPRINGS.

Guaranteed 12 months.—Each spring to carry from 4 to 5 tons.

The Patentee invites the attention of Railway Authorities, Carriage Builders, &c., to his NEWLY-INVENTED CONICAL SPRING, for BUFFING AND DRAWING; its mechanical action will be found to be both easy and powerful, and from the principle of each coil falling within the others, until they form a flat surface, the spring can sustain no injury from any blow or pressure when driven home; its amount of play in these is much greater, in proportion to the price, than in any other springs. The use of wrought-iron cylinder plungers (which the patentee has been the first to introduce), will at once be seen to offer a security against breakage, hitherto unknown in any buffer spring. It has been the determination of the patentee to introduce these springs at such prices as will admit of their application to all description of railway plant.

It will be seen from the subjoined list of prices, that, taking into consideration the proportion of play and the durability of the material used, "steel"—these are at the same time the cheapest and most effective Buffer Springs now in the market; they are already in use upon 31 different lines of railway in the United Kingdom.

PRICES PER SET OF FOUR BUFFERS, COMPLETE.

With Wrought-Iron Buffer-Rods, or Cylinder Plungers.

For General Waggon—9-inch diameter at base, 3-inch play... £6 0 0
For Goods Waggon—Vans, &c.—10-inch ditto, 4-inch ditto... 7 10 0
For Cattle Waggon, Engines, Tenders, &c.—11-inch ditto, 4½-inch ditto... 9 10 0
For Passenger Carriages—10-inch ditto, 7-inch ditto... 11 10 0

If with cast-iron plungers, 9 10 11-inch, 5s. 10s. 10s. per set less than the above.

Draw springs, with 2½ 3½-inch play, 32s. 40s. per pair.

Delivered in Sheffield, Birmingham, or Glasgow.

The BUFFERS may BE SEEN at the Patentee's, ATLAS STEEL and SPRING WORKS, SHEFFIELD, and upon application to his agents, as under, where further information may be obtained:—

LONDON.—Mr. J. Freeman, 19, Artillery-place, Finsbury.
GLASGOW.—Mr. A. Tolmie, 166, Buchanan-street.
BIRMINGHAM.—W. G. Tibbott, 54½, Great Charles-street.
NEWPORT (Monmouthshire).—Mr. E. W. Toogood.

THE PATENT OFFICE AND DESIGNS REGISTRY.

No. 210, STRAND, LONDON.

INVENTORS will receive gratis, on application, the OFFICIAL CIRCULAR OF INFORMATION, detailing the eligible course for PROTECTION OF INVENTIONS AND DESIGNS, with Reduced Scale of Fees.

Messrs. F. W. CAMPIN and CO. offer their services, and the benefit of many years' experience, in SECURING PATENTS AND REGISTRATIONS OF DESIGNS, with due regard to VALIDITY, economy, and dispatch—assisted by scientific men of repute. Also, in MECHANICAL AND ENGINEERING DRAWINGS, whether connected with Patents, Railways, or otherwise, by a staff of first-rate draftsmen.

Application personally, or by letter, to F. W. Campin and Co., No. 210, Strand (corner of Essex-street).

DAMP AND GASEOUS EXHALATIONS.

SANITARY MEASURES.

ALL MEMBERS OF BOARDS OF HEALTH are especially DIRECTED to the most EFFECTIVE MEANS which they can ADOPT to PREVENT the injuries and all FATAL EFFECTS upon the HEALTH OF THE COMMUNITY, arising from exhalations that are produced from moisture, decayed animal matter (as in grave-yards), stagnant water, and collections of fetid refuse, tending to produce a miasmatic state of atmosphere. In situations so affected, the impervious quality of ASPHALTE of SEYDEL renders it the most perfect PAVEMENT or COVERING that can be relied upon for mechanically closing, and thereby preventing the rising of moisture and escape of noxious vapours. The present extensive application of this material for covering roofs, terraces, and arches, for preventing the percolation of wet, is strong evidence of its effectiveness for the above purposes, which is further confirmed by the following extract from the report of the Commissioners on the Fine Arts:—

"In 1839, I superintended the construction of a house of three stories on the Le d'Azegheh. The foundation of the building is constantly in water, about 19 inches below the level of the ground floor. The entire horizontal surface of the external and internal walls was covered at the level of the internal ground floor with a layer of SEYDEL ASPHALTE, less than half an inch thick, over which coarse sand was spread."

Since the above date, no trace of damp has shown itself round the walls of the lower